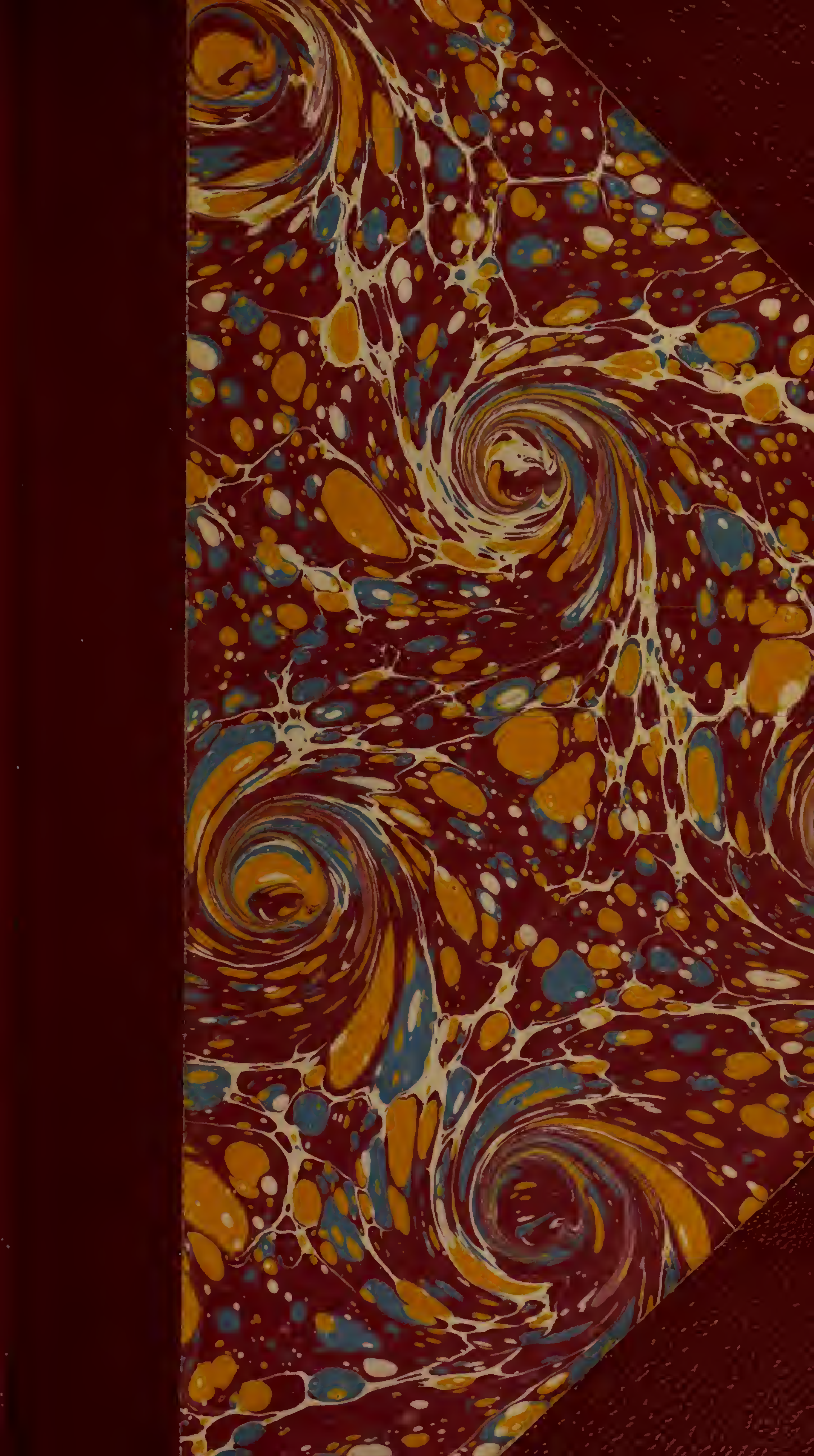


Digitized by the Internet Archive
in 2016

https://archive.org/details/b22042775

PRACTICAL OBSERVATIONS ON THE INOCULATION of the *COW-POX*:

TO WHICH IS PREFIXED,

A COMPENDIOUS HISTORY OF THAT DISEASE;

AND OF ITS INTRODUCTION AS A

PREVENTIVE OF THE SMALL-POX.

Deſigned principally to promote a Knowledge of the Subject amongſt thoſe who have not hitherto attended to it.

By JOHN ADDINGTON, Surgeon.

THE SECOND EDITION.

BIRMINGHAM:
Printed and ſold by J. Belcher, in the Bull Ring:
Sold alſo by T. Wood, No. 73, High-ſtreet;
And by J. Johnson, St. Paul's Church Yard, and M. Gurney,
Holborn Hill, London.

Price One Shilling and Six-pence.

WELLCOME
HISTORICAL
MEDICAL
LIBRARY

ADVERTISEMENT

TO THE

SECOND EDITION.

IN a ſecond Edition of this pamphlet, it may reaſonably be expected that ſome ſpecial notice ſhould be taken of that part of the ſubject on which a degree of doubt and heſitation was formerly expreſſed, viz. on the queſtion ſtated at page 39, "*How far* GENERAL CUTANEOUS ERUPTIONS *of the puſtular, or of any other kind, form a part of the character of the Cow-Pox?*"

It is but juſtice to mention, that throughout the whole of the Author's practice ſince the date of the firſt Edition, no caſe of ſuch Eruptions has appeared: and, what is more to the purpoſe, that the accumulated, and ſtill rapidly accumulating evidence, ariſing from various

various quarters, and marked with ſcrupulous attention to this particular point, inclines to the concluſion, that wherever ſuch Eruptions have appeared in connection with the vaccine diſeaſe, they have proceeded from variolous contamination.

The inference is obvious:—Too much care cannot be obſerved to avoid every poſſible ſource of Small-pox contagion, however remote, during the vaccine treatment; and, perhaps, alſo, for ſome days previous to the Inoculation.

SPITAL-SQUARE, LONDON,
APRIL 14, 1801

PRACTICAL OBSERVATIONS

ON THE

COW-POX,

&c. &c.

INTRODUCTION.

OF all the diſcoveries relating to the medical art, which have engaged the attention of its practitioners, or of the public, none have appeared of greater intereſt or importance, than the facts which have given riſe to the modern practice of Cow-Pox Inoculation. To the validity of theſe facts, and the ſtriking advantages of this practice, a moſt extraordinary quantity of evidence has been adduced in the ſhort ſpace of little more than two years, ſince the able introduction of the ſubject to public notice by Dr. JENNER*. To him, excluſively, the merit and the honour belong, of having marked with philoſophic attention, and drawn forth to the obſervation, and for the benefit of ſociety, a ſeries of intereſting particulars, not indeed in themſelves unknown to a certain claſs of people; but with them, as to the valuable purpoſes to which they were capable of being rendered ſubſervient, altogether diſregarded.

---

* Inquiry into the Cauſes and Effects of the Variolæ Vaccinæ, 1798.

Since

Since the date of Dr. Jenner's firſt publication on this ſubject, in 1798, there have appeared a conſiderable number of books, and ſtill more of communications in the monthly periodical works, replete with the moſt deciſive and ſatisfactory teſtimonies to the principal facts which were at firſt made known.—The Cow-Pox Inoculation has been adopted by medical practitioners, and others in various parts of the kingdom; and of all who have engaged in the practice to any extent, the evidence is abundantly in favour of the advantages attending it, as a perfectly ſafe, mild, and efficacious preventive of that moſt fatal and afflicting malady, the Small-Pox.

However deſirable therefore it may be, for the purpoſe of comparing the various accounts, and by them aſcertaining the whole hiſtory and character of the diſeaſe; that this evidence ſhould be collected from every quarter in which the Inoculation has been carried on with due attention to its mode, progreſs, and effects; enough, it may be preſumed, has already been adduced to recommend it to general adoption, at leaſt by way of experiment. But this evidence is hitherto principally before the profeſſional part of the public; and notwithſtanding the uncommon intereſt which it has excited in certain circles, and the vaſt importance of the inveſtigation to mankind at large, it is ſurpriſing to obſerve how little enquiry has been made, and how ſmall the information poſſeſſed, by the bulk of the community. Yet, till it ſhall have been thus generally received, the beneficial operation of the diſcovery will be confined within narrow limits; and its grand advantages in a public view, as a means of extirpating its formidable rival, will continue to exiſt only in the ſphere of philanthropic contemplation.

The author of the following ſheets, having pretty early enliſted amongſt the experimenters on this intereſting ſubject, has been led to pay ſome attention, not only to the actual appearances and progreſs of inoculated Cow-Pox; but alſo to the teſtimony that has been produced from various quarters concerning it; and he has long deſired to ſee, from a more able pen than his own, a brief compendium of the knowledge hitherto obtained. A ſmall expence in the purchaſe, and a ſhort time neceſſary for the peruſal, appear to be two important requiſites in a book which is deſigned to invite an extenſive inquiry, and to communicate extenſively alſo, the deſired information. To theſe, it will not be arrogant to lay claim in behalf of the preſent attempt:—and if at the ſame time it ſhould be found to include ſufficient copiouſneſs, accuracy, and perſpicuity in the ſtatements it affords, the deſign will not be unanſwered, nor the publication itſelf, it is hoped, altogether unacceptable.

Two objects are propoſed. One is that of aſſiſting in the diffuſion of the knowledge already obtained on the ſubject of Cow-Pox, with a view to a more general adoption of the practice of its inoculation;—the other, that of adding to the teſtimonies already before the public, the reſults of the author's own experience:—in both, he conceives, he is only diſcharging a duty which is more or leſs incumbent on every one who has engaged in an inquiry ſo intimately connected with the benefit and happineſs of ſociety.

The firſt of theſe objects will be attempted by a conciſe account of all the principal facts which have been brought to light in the hiſtory of Cow-Pox; with

the

the authorities adduced in their ſupport; and by a comparative view of the advantages of communicating this diſeaſe by inoculation, in preference to the ſmall-pox.—The ſecond, by exhibiting a number of caſes in a tabular form, by means of which the particular character of each is given at one view: with the addition of ſuch remarks as they afford, bearing more eſpecially on ſome few parts of the ſubject, not yet fully and ſatisfactorily elucidated.

CHAP. I.

OF THE ORIGINAL OR NATURAL COW-POX,

OR THE DISEASE AS IT APPEARS AMONG CATTLE.

IN ſeveral parts of the kingdom *, viz. the counties of Dorſet, Somerſet, Devon, Hants, Middleſex, Norfolk, Bucks, Oxford, Leiceſter, Stafford †, and eſpecially in Glouceſterſhire, a diſeaſe has long been obſerved to prevail occaſionally among milking cows; which has been called by different names, but chiefly by that of the Cow-Pox. It is deſcribed as affecting the teats or nipples of the udder, and appearing in the form of puſtules, or little bladders (as the farmers call them) of an irregular figure, and of a pale blueiſh colour, approaching to livid, containing a thin, watery, acrid fluid. —The parts ſurrounding theſe puſtules are hardened, ſwelled, and inflamed; and the puſtules themſelves very liable to fall into deep ulcerous ſores, *eating into the fleſh*, (as it is expreſſed) and diſcharging firſt, a thin eroſive fluid, and afterwards matter of a thicker conſiſtence; till by degrees the ulcers heal, and are covered with thick hard ſcabs, which alſo continue for ſome length of time, and then fall off; leaving the ſurface underneath, nearly of its uſual ſmooth and perfect appearance. During this courſe, the animal often ſuffers in her health, is dull and uneaſy, takes leſs food, and yields a more ſcanty ſupply of milk. The ſeverity of her indiſpoſition is proportioned to the number and continuance of theſe ulcerating puſtules, but may be nearly, if not altogether prevented, by the timely uſe of ſuch remedies as are well known to the Farriers or Cow Doctors in thoſe neighbourhoods where the diſeaſe is frequent, and well underſtood. Theſe perſons, by means of eſcharotic or cauſtic applications, deſtroy the peculiar and ſpecific action in which the diſeaſe conſiſts, and which then gives place to the ordinary healing powers inherent in all living healthy conſtitutions.—The indiſpoſition has never been known to prove fatal to the cattle affected by it.

---

* Vide Dr. Pearſon's "Inquiry concerning the hiſtory of the Cow-Pox," &c.

† There are different accounts of the exiſtence of the diſeaſe in Staffordſhire, ſome affirming, others denying that it has been met with in that county. From ſtatements that I have received in the courſe of the inquiries to which the practice of inoculating with it has given riſe, I have no doubt of its having appeared on different farms on that ſide of the county which adjoins to Warwickſhire; though I have not yet had an opportunity of witneſſing it perſonally.

The above is the form and variety of the diſeaſe in queſtion, which may truly and diſtinguiſhingly be called the Natural Cow-Pox.—Its origin does not ſeem to be perfectly underſtood; although there are not wanting facts, as well as opinions, which lead to Dr. Jenner's firſt ſuppoſition of its being derived from the matter of the diſeaſe termed the *Greaſe* in the heels of horſes; and carried from one animal to the other by the hands of uncleanly perſons employed, firſt of all in dreſſing the horſes, and afterwards in milking the cows. It is unneceſſary here to ſtate the arguments and experiments which have been adduced in ſupport, or in refutation of this ſuppoſition—which at preſent ſeems likely to be abandoned. But one thing it is important to remark, viz. the eſſential difference which ſubſiſts between the diſeaſe we are treating of, and ſome other morbid affections of the udders of cows, in

which

which alſo puſtules and ſores are occaſioned, that may poſſibly be miſtaken for thoſe of Cow-Pox—The animals are liable to theſe other affections from a variety of cauſes, as the ſtinging of flies or waſps; the exceſſive and long continued diſtenſion of the udder with milk, as practiſed by the dealers in cattle for the advantageous ſale of them in the markets; from injuries received in the ſuckling of their young, &c. &c.—But none of theſe diſorders have the peculiar colour and appearance of the Cow-Pox puſtule, nor its ſpecific ulcerous diſpoſition: neither are they in general capable of being communicated to the hands of the milkers, ſo as to produce correſponding ſores, and a ſucceeding indiſpoſition.

Cows, we are informed, are liable to repeated attacks of the diſeaſe; but after the firſt, it is commonly much leſs ſevere.

CHAP. II.

OF THE CASUAL COW-POX,

OR THE DISEASE AS IT APPEARS ON THE HANDS OF PERSONS WHO ACCIDENTALLY RECEIVE IT FROM THE ANIMAL.

IT has been generally conſidered, that the Cow-Pox, when once introduced into a herd of cattle, is transferred from one to the other, not by contagious effluvia; but by the matter of the diſeaſe falling on the hands of perſons employed in milking, and thus conveyed to other cows, by a ſort of accidental inoculation. Perhaps, till the real origin of the diſeaſe ſhall be perfectly aſcertained, the mode of its communication amongſt the animals, cannot be thoroughly underſtood. Be this as it may, the manner in which it is received by the human ſpecies is ſufficiently obvious. There is no reaſon to believe that the virus from the nipple of the cow is capable of affecting the hand, or any other part in which the ſkin is perfect and of the ordinary thickneſs. But when it is conſidered how very ſmall a ſcratch, or abraſion of the cuticle is ſufficient for the purpoſe of inoculating with any active virus; and how ſeldom the hands of ſervants and perſons employed in the milking of Cows can be ſuppoſed to be free from ſuch very minute injuries; we ſhall be at no loſs to account for their receiving the infection of the vaccine matter from the teats or udders, in the courſe of this operation.

Accordingly, the diſeaſe which we have termed the *Original or Natural Cow-Pox*; when once broke out

out in a dairy of cows, is pretty certainly communicated to the hands of the milkers: and in this variety, is well deſignated by the appellation of the *Caſual* Cow-Pox.—It appears on thoſe parts of the hands, which by the above-mentioned ſlight injuries, have been prepared to imbibe the infection; in the form of ſmall inflamed ſpots, on which, after a few days, ſmall bliſters reſembling thoſe of burns, ariſe, and go on increaſing till they become ſuppurating puſtules;—of a circular form and flattened on their ſurface, with elevated edges;—of a blueiſh colour, nearly, but not exactly reſembling the natural ones in the Cow; and containing a limpid fluid.—The baſes and ſurrounding parts of theſe puſtules have a degree of hardneſs and inflammation which, as the diſeaſe advances, increaſes and takes on an eryſipelatous appearance:—The matter alſo, which was at firſt thin and colourleſs, acquires a browniſh tinge, and a thicker conſiſtence. At a certain ſtage of this local affection, commonly after it has exiſted but a few days, the conſtitution begins to ſuffer. Pain and ſwellings in the arm pits betray an abſorption of the contagious matter; and the ſyſtem becomes affected with all the uſual ſymptoms of an inoculated febrile diſeaſe—as ſhiverings, with ſucceeding heat and a quickened pulſe, wearineſs and pains in the limbs, ſickneſs and ſometimes vomiting, pain in the head, and now and then, it is ſaid, ſlight delirium. After one, two, three, or four days continuance, theſe affections ſubſide; leaving the ſores which gave riſe to them, in a troubleſome, ulcerating ſtate: and as the matter of them is ſometimes conveyed by incautious contact or rubbing, to the lips, noſtrils, or eyelids, where the cuticle is ſo thin as to admit of its abſorption, the like ſores are alſo produced on theſe parts. But it does not appear that the febrile ſtage is ever followed, as in ſmall-pox, chicken-pox, &c. with any ſpontaneous eruption of puſtules in different parts of the body, proceeding like the original ones, either to maturation or to the ſtate of ulcers—Dr. JENNER mentions a ſingle inſtance, wherein a few red pimples appeared for a day or two, and then died away, without coming to any maturing head*. The ſores, though commonly ill-conditioned, and, unleſs ſkilfully managed, healing with ſome difficulty, are, for the moſt part, ſubdued without occaſioning any laſting injury of the affected parts; and the general diſeaſe, though in this caſual form of it, often ſevere, owing probably, to the number of the puſtules, and their ſituation in tendinous parts, is generally of tranſient duration; and in no recorded inſtance, has it been known to prove fatal to life.

Such are the characteriſtics of the Caſual or Accidental Cow-Pox, in the human ſpecies.—In the neighbourhoods where it moſt frequently prevails, both its form and management are well underſtood. If, by means of cauſtic or corroſive applications to the inflamed ſpots, or puſtules, in an early ſtage, the peculiar morbid infection is deſtroyed in the part; the ſores quickly heal, and the conſtitutional diſeaſe is thereby rendered very inconſiderable, if not altogether ſuperſeded. In theſe ſituations it is well known that perſons are liable to repeated attacks of it; although it generally proves ſlighter in every ſucceſſive inſtance. It ſeems alſo, notwithſtanding the concluſion derived from ſome late experiments as they refer to inoculated Cow-Pox, which would lead to a contrary opinion†, that perſons having paſſed through the ſmall-pox, are yet ſuſceptible of the Cow-Pox; though in them alſo, it uſually takes place in a much milder form: and on theſe accounts, whenever the diſeaſe makes its appearance amongſt a herd of cows; the buſineſs of the dairy is carried on with leſs interruption, by ſelecting ſuch of the ſervants for the office of milking, as, from having paſſed through one or both diſeaſes already, are, to a certain degree, guarded againſt the ſeverity of the infection.—Further, that the Caſual Cow-Pox is not communicable, like the natural ſmall-pox, by inviſible effluvia or contagion; but only by the direct application of a viſible or palpable portion of the matter of the diſeaſe; or in the language of the country, *that it is not catching*, is an opinion which appears to be very generally received.—But what is moſt of all remarkable and worthy of ſpecial conſideration in this hiſtory, is, the certain perſuaſion which ſeems to have been connected with the knowledge of the diſeaſe itſelf; of its affording to the perſons who have been affected by it, a perfect and entire ſecurity againſt the attack of ſmall-pox for ever afterwards.

---

* Inquiry, &c. 2d edit. p. 6.

† Report of the Vaccine Inſtitution, Medical and Phyſical Journal, Vol. iii. p. 175. § 6 and 7.

This moſt extraordinary fact, which forms the baſis of all thoſe important particulars that have lately been aſcertained; and of the practice now ſo deſervedly recommending itſelf to univerſal adoption; ſeems to have been perfectly underſtood, wherever the Cow-Pox was frequently known to prevail.* Not only in Glouceſterſhire, where it was ſo happily ſeized upon, and drawn from its comparative obſcurity and inutility,

---

* As in Ireland, where the diſeaſe was known under the name of Shinagh—ſee a letter from Dr. Bany, of Cork—Medical and Phyſical Journal, Vol. iii. p. 503.

by

by the meritorious attentions of Dr. Jenner; but in other parts of the kingdom* likewiſe, perſons who have been preſented to medical practitioners for the inoculation of the ſmall pox; have declared themſelves incapable of receiving it, on account of their having previouſly undergone the Vaccine diſeaſe:—A prediction which has uniformly been verified by ſucceeding obſervations.

---

[*] A medical gentleman in this neighbourhood informs me of this having been the caſe in Hampſhire, where he once reſided.

CHAP.

CHAP. III.

OF THE INOCULATED COW-POX,

OR THE DISEASE DESIGNEDLY COMMUNICATED.

FROM a little reflection on the facts contained in the foregoing chapters, the inference would naturally ſuggeſt itſelf, that they were capable of being rendered highly beneficial to ſociety; and the earlieſt opportunity would be embraced, of inſtituting ſuch a ſeries of experiments, as to aſcertain, with ſome preciſion, how far thoſe facts were uniform and unvarying in their character, and to what extent they might be rendered permanently uſeful.

Accordingly, a number of caſes are adduced by Dr. JENNER, which fully authorize the principal concluſions he has drawn.—In the firſt place, perſons who were known to have paſſed through the Caſual Cow-Pox; ſome of them recently, and others ſo long as twenty-five, twenty-ſeven, thirty-one, thirty-eight, and even upwards of fifty years before; and of whom it was very certain alſo, that they had never been affected with the ſmall-pox, were now inoculated with active matter of this laſt diſeaſe, and expoſed to the contagion of it in almoſt every poſſible way, without being made to receive the leaſt conſtitutional affection; thus affording the moſt direct confirmation to their own aſſertions, and to the general opinion that prevailed

prevailed amongſt them.—Again—a number of perſons, (principally children,) who had not yet paſſed through either of the diſeaſes; were ſubjected, firſt of all, to the inoculation of the Cow-Pox; and afterwards of the ſmall-pox: being likewiſe freely expoſed to the infection in the natural way:—and the reſult furniſhed the moſt ſatisfactory aſſurance, that the inoculated Cow-Pox, not leſs than the caſual, afforded the ſame perfect ſecurity againſt the ſmall-pox.

By theſe experiments, and others conducted about the ſame time, and with the ſame view; a number of intereſting particulars reſpecting the diſeaſe in queſtion, were clearly made out; and its form and appearances in its different ſtages, accurately diſplayed.—But as theſe are the particulars in the hiſtory of the Cow-Pox, which it is moſt neceſſary to eſtabliſh to the ſatisfaction of thoſe who may examine the evidences relating to it; and as it is incompatible with the plan of this ſmall undertaking to trace in detail, the numerous proceſſes by which they were aſcertained; I ſhall lay aſide the narrative form juſt entered upon, and endeavour to arrange them as conciſely as poſſible, under ſo many diſtinct heads: ſhewing at the ſame time the principal authorities which have appeared in their ſupport.

In the FIRST place; it appears that the inoculated Cow-Pox-puſtule, or Veſicle, (as in this ſtate I would rather call it,) on the human ſkin, does not exactly reſemble that of the caſual:—and ſtill more diſtantly, that of the original or natural diſeaſe on the nipples of the animal. Both the prominent form, and blueiſh colour of the natural puſtule, are leſs conſpicuous in the caſual, and are nearly loſt in the inoculated; ſuppoſing the inoculation to have been

been made from the caſual, and not immediately from the cow. Afterwards, however, it does not appear that any given ſeries of inoculations, produces any further change in the appearance of the veſicle; and it is curious to obſerve, that if, after ſuch an intervening ſeries, the matter be again transferred to the nipple of the cow; the puſtule it produces there, re-aſſumes its original form and colour; and alſo conveys in the caſual way, one of exactly the ſame kind, as if it had never paſſed through any other ſtate or animal:—ſhewing that the virus has preſerved its peculiar qualities, in all the circumſtances through which it has been carried.

Secondly. Both the local veſicle, and conſtitutional diſeaſe, are much milder in the inoculated, than in the caſual Cow-Pox:—owing probably to there being only a ſingle veſicle in the former, and that ſituated in a fleſhy part, naturally well diſpoſed for healing; whereas in the latter, there are often many puſtules; and in tendinous parts, as about the fingers and joints, where all ſores are liable to prove tedious and painful.

Thirdly. The uſual characters of the inoculated Cow-Pox are as follows. On the third day from the inſertion of the virus; ſometimes ſooner, there is a perceptible inflammation in the part.—Between that and the ſixth day, a veſicle riſes on the inflamed ſurface, and a ſmall defined tumor is thus formed, reſembling the effect of a burn; having ſome degree of hardneſs; and, if the inoculation has been performed by ſimple puncture, or a very minute ſcratch, taking on a circular figure, with its edge elevated, and diſcovering a pale fluid to be contained in the veſicle:—

veſicle ;—its centre continuing flat, and exhibiting a darker coloured ſpeck, which repreſents the cuticle ſtill adhering in that ſpot to the ſkin underneath.—From this time the tumor enlarges, and fills with a limpid fluid, till about the 8th, 9th, or 10th day, when (if not before) the diſeaſe of the conſtitution takes place. This diſeaſe in its ſevereſt form, is exactly the ſame as has been deſcribed in the Caſual Cow-Pox—Pain and ſoreneſs in the inoculated part and in the arm pit:—ſhiverings, and afterwards increaſed heat ; wearineſs, pains in the limbs, nauſea, vomiting, and head-ach.—But, in far the greater number of inſtances, eſpecially in children, the indiſpoſition is ſo ſlight as to be ſcarcely, or not at all perceptible; or it conſiſts of a few hours of increaſed heat, peeviſhneſs and reſtleſsneſs. At moſt, it diſappears in a day or two, without the application of any remedy. About the ſame period, a ſtriking alteration takes place in the arm ; the occurrence of which, at this juncture, is juſtly conſidered as an infallible token of the proper affection of the ſyſtem ;—The inflammation, which before was confined to the baſe of the tumor, now ſpreads around it, more or leſs rapidly, to the extent of one or two inches, ſometimes more : exhibiting a pink, a ſcarlet, or even a crimſon colour ; and attended with evident ſwelling and hardneſs of the integuments. No ſooner has this inflammation taken place, than the veſicle, in which the fluid continues limpid throughout ; no longer increaſing in ſize, begins to dry up : and in two or three days more, the red colour of the ſurrounding ſkin fades ; the ſwelling declines ; and the ſore in its laſt ſtage, is covered with a thick dark-coloured ſcab, not unaptly compared to a dried tamarind ſtone, which adheres for ten

ten or twelve days or longer, and then falls off. It has ſometimes happened, that inſtead of healing thus readily, the veſicle has paſſed into a ſtate of ulceration, which has proved tedious and troubleſome; but of late, theſe inſtances are rare:—and this ulceration, when it does occur, is checked and ſubdued without any difficulty, by a timely uſe of cooling or mildly eſcharotic applications.——Although no eruption of maturating puſtules appears commonly to belong to this diſeaſe; it is not unuſual to find, during, or ſubſequently to the febrile ſtage, a few ſcattered inflamed pimples, chiefly about the face or extremeties; and theſe are uſually ſo few in number, and ſo tranſient in duration, that they might often eſcape obſervation, if not particularly ſearched for.—In ſeveral inſtances alſo, I have known in the ſame period of the diſeaſe; a light, ſcarlet efflóreſcent raſh diſperſed over the trunk of the body, or the legs and feet.

The particulars which more eſpecially require the authority of abundant and credible teſtimony, are thoſe which follow under Nos. 4 and 5.

FOURTHLY. The Inoculated Cow-Pox is a diſeaſe, uniformly mild in its progreſs, and favourable in its iſſue.

A late report, preſented to the public Diſpenſary at Birmingham, by its phyſician, Dr. BREE, eſtimates the number of perſons that have paſſed through this inoculation, at no leſs than Fifty Thouſand.—And this number, on examination, will be found to include every ſuppoſable variety of conſtitutions, and of ages, from the tendereſt infancy of twenty hours,

to

to the declining years of ſixty.—yet not a ſingle inſtance is recorded of fatal termination*; or even of dangerous indiſpoſition.

FIFTHLY. The Inoculated Cow-Pox is a perfect preventive of the ſmall-pox.

Of the numbers who have paſſed through the vaccine diſeaſe, a large proportion, probably not leſs than a third, have afterwards been ſubjected to the inoculation of the ſmall-pox;—and have likewiſe been expoſed to its contagion in what is called the *natural way*, in almoſt every poſſible mode.—Yet not one well authenticated caſe appears, of a patient ſuffering the latter, after having diſtinctly undergone the former.

As theſe two laſt propoſitions are of primary importance in the conſideration of the ſubject, we ſhall ſelect moſt of the principal authorities which have appeared in their ſupport.—In addition to the reſpect-

---

* This ſtatement is made without heſitation, notwithſtanding the inſtance of mortality publiſhed by Dr. WOODVILLE in his "Reports." The diſeaſe in that inſtance ſeems clearly to have been a caſe of the ſmall-pox, although the patient was under the vaccine inoculation at the ſame time:—a concurrence, or mixture of the two diſeaſes, (the effect, Dr. WOODVILLE now ſuppoſes, of a VARIOLATED ATMOSPHERE*,) which took place in many of the patients whoſe caſes are there exhibited.—Moreover, the child was of an age at which the teething proceſs is frequently ſeen to aggravate the ſymptoms of ſmall-pox:—and after an eruption of eighty or an hundred puſtules, it died of convulſions. Neither eruptive puſtules nor convulſions, ordinarily belong to the Cow-Pox.

* See "Obſervations on the Cow-Pox."

able

able names of Drs. JENNER †, GEORGE PEARSON ‡, and WOODVILLE §, who may be conſidered as leaders in the inveſtigation of this ſubject; we ſhall adduce thoſe of Drs. SAUNDERS *, BAILLIE *, VAUGHAN *, GARTHSHORE *, LETTSOM *, JAMES SIMS *, JOHN SIMS *, LISTER *, WILLAN *, STANGER *, CRITCHTON *, BRADLEY *, DENMAN *, SQUIRE *, CROFT *, and THORNTON *, phyſicians in London:—and of ſurgeons, Meſſrs. ABERNETHY *, BLAIR *, CHILVER *, CLINE *, COOPER *, FORD *, GOOD *, HORSFORD *, HURLOCK *, KNIGHT *, LEIGHTON *, MOORE *, PAYTHERUS *, POLE *, PHIPPS *, RING *, SIMPSON *, THOMAS *, WATHEN *, WHATELY *, &c.

It would be eaſy to multiply names of the firſt profeſſional reſpectability in the metropolis, which have been given in ſupport of the opinions in queſtion. The confidence, however, both of medical men and others, on this ſubject; is beſt ſhewn by the extent to which the practice has been carried, both in private families and in public inſtitutions, ſuch as hoſpitals and diſpenſaries; eſpecially in the inſtitution in Warwick-ſtreet, Golden Square, eſtabliſhed purpoſely for the vaccine inoculation, and encouraged by very diſtinguiſhed patronage*. But it is not profeſſional men alone, who have engaged in this practice or its recommendation in London.—The editors of ſome of the periodical journals have produced ample teſtimony in its ſupport:—and ſome of the clergy. The Rev. Mr. Finch, miniſter of Saint Helens, has publiſhed reports of no leſs than Seven Hundred and Fourteen caſes which confirm the general teſtimony. [‖]

---

† Vid. "Inquiry into the Cauſes and Effects of Variolæ Vaccinæ," &c. Low, 1798.

—— "Further Obſervations on the Variolæ Vaccinæ." Low, 1799.

—— "Continuation of Facts and Obſervations relative to the Variolæ Vaccinæ." Low, 1800.

‡ Vid. "An Inquiry concerning the Hiſtory of the Cow-Pox." Johnſon, Nov. 1798.

§ Vid. "Reports of a Series of Inoculations for the Variolæ Vaccinæ, or Cow-Pox." Phillips and Son. 1799.

—— "Obſervations on the Cow-Pox." 1800.

N. B. Each of theſe gentlemen have publiſhed various other communications in the different periodical journals.

* See theſe names affixed to a declaration of the opinion of theſe gentlemen, of the Inoculated Cow-Pox affording perfect ſecurity againſt ſmall-pox; and of its being a much milder and ſafer diſeaſe than inoculated ſmall-pox; in ſome of the London papers, in the month of July, 1800, and in the Monthly Magazine for Auguſt—ſome of theſe gentlemen, alſo, are authors of expreſs communications and practical obſervations to the ſame effect, in the Medical and Phyſical Journal, vols. i. ii. and iii.

---

* Founded December 2, 1799, and with the following eſtabliſhment:—

Patron,
HIS ROYAL HIGHNESS THE DUKE OF YORK,
President;

Vice Presidents,
Right Hon. Lord PETRE,
Sir GEORGE BAKER, Bart.
Wm. DEVAYNES, Eſq. M.P.
Sir Wm. LEE, Bart.
H. J. DE SALIS, D.D. F.R.S.
Wm. ADAM, Eſq. M. P.

Treasurer,
STEPHEN AISLEY, Eſq.

Physicians,
GEO. PEARSON, M.D. F.R.S. | LAW: NIHELL, M. D.

Consulting Suegeons,
THO. KEATE, Eſq. F. R. S. | JOHN RUSH, Eſq.

Surgeons,
ROBERT KEATE, Eſq. | JOHN GUNNING, Eſq.

Visiting APOTHECARIES,
AUG. BRANDE, Eſq. | F. RIVERS, Eſq. | Mr. EV. BRANDE.

Resident Apothecary,
Mr. J. LEWIS.

In the country we may mention amongſt others; the names of Dr. Redfearn [†] of *Lynn*, Dr. Huggan [†] of *Weſt Kent*, Dr. Cappe [*] of *York*, Drs. Currie [*], Houghton [*], Thackery [*], and Arden [*] of *Cheſter*, with twelve ſurgeons of the ſame place.—Dr. Remmett [†] of *Plymouth*, with Meſſrs. Stewart [†] and Dunning [†].—Dr. Cayley [*] of *Durham*, with Meſſrs. Potts [*], Clifton [*], James [*], Green [*], Ward [*], and Fothergill [*].—Drs. Baynes [*], Davison [*], Hird [*], Thorp [*] and Walker [*], of *Leeds*.—Dr. Evans [‡], of *Ketley* in *Shropſhire*;—Meſſrs. Ruddock [†], Sedgfield [†], and Nelson [†], ſurgeons in *Cheſter le Street*.—Mr. Hughes [†] of *Stroud*, Mr. Grose [†] of *Winſlow*, Mr. Shorter [†] of *Bloxham*, the Rev. Mr. Holt [†] of *Finmere* in *Oxfordſhire*, Mr. H. Jenner, [§] and William Fermor, Eſq [¶]. moſt, or all of whom are actually engaged in the practice, and are fully impreſſed with the truth and value of the foregoing facts.

[‖] Vid. Med. and Phyſ. Journal, vol. iii. p. 415.

[†] Ibid. vol. i. ii. and iii.

[*] Vid. Monthly Magazine from Jan. to Nov. 1800.

[‡] Vid. Medical and Phyſical Journal;—and alſo a private letter with which this gentleman honoured me, in conſequence of my having ſupplied him with vaccine matter;—and which contains the hiſtory of upwards of ſeventy caſes.

[§] Vid. an "Addreſs to the Public on the Advantages of Vaccine Inoculation," 4to. Cadell and Davies.

[¶] Vid. "Reflections on the Cow-Pox, illuſtrated with Caſes to prove it an abſolute Security againſt the Small-Pox." 8vo. Robſon and Robinſon.

I ſhall cloſe this article, which might be enlarged to a much greater extent; by ſhewing the prevalence of the general opinion, in favour of the Cow-Pox inoculation, as it is manifeſted by the practice having been received into many of the medical inſtitutions for charitable purpoſes, in different places; as the hoſpitals and diſpenſaries, at *York*, *Hull*, *Birmingham*, and other large towns.—By its having been conducted in ſome departments in his Majeſty's navy, under the conduct of Dr. TROTTER, who ſays it is ſupported by all the ſcientific part of the profeſſion, in the ſouth and weſt of the kingdom*.—By its having been practiſed on a very large ſcale in the army, by the direction of His Royal Highneſs the Commander in Chief.—By its having been carried into *Scotland*†, *Ireland*‡, and to the continent.—At *Bologne*¶ and at *Paris*¶, it was introduced by Dr. WOODVILLE, (who went over on this account) and is making conſiderable progreſs;—at *Vienna*, by Dr. DE CARRO†, and Dr. FERRO†;—at *Hanover*, by BALLHORN‖ and Mr. STROMEYER‖;—at *Geneve*, by Dr. ODERS¶;—at *Halle*‖, *Halberſtadt*‖, &c. &c.

SIXTHLY. The Cow-Pox is not uſually attended with any eruption of general puſtules over the body:—neither is it accompanied with any Fætor.

SEVENTHLY. The Cow-Pox is generally conſidered as not being communicable by effluvia;—but only by inoculation, accidental or deſigned:—that is, by the actual application of a viſible or palpable portion of the matter of the diſeaſe, to a part of the ſurface of the body, in which the cuticle is either wounded or abraded; or where that is the only covering, and the true ſkin is wanting: as on the lips, inſide of the noſtrils, and eye lids.

---

* Med. and Phyſ. Journal, vol. iii. p. 524.

† Vid. Dr. Pearſon's letter in Med. and Phyſ. Journal, vol. ii. p. 98.

‡ Medical and Phyſ. Journal, vol. iii. p. 503.

¶ Vid. Monthly Magazine, 1800.

‖ Med. and Phyſ. Journal, vol. iii. p. 471, communicated by Mr. Hunnehman, of Mortimer-ſtreet, London, April 18, 1800.

The moſt deciſive experiments that the caſe admits of, have been repeatedly made to eſtabliſh this laſt particular.—Not only has every ſort of intercourſe been encouraged between the inoculated, and thoſe who have not had the diſeaſe; but children have been inoculated at the breaſt of their mothers; and mothers under inoculation, have had children, whom they conſtantly nurſed, and who ſlept on the infected arm, ſo as to be inhaling its vapour, if any vapour is given out by it, for nights together; and in both caſes without communicating the diſeaſe.

I have ſtated however, the ſixth and ſeventh propoſitions in this guarded manner, becauſe the evidence which applies to them, is not yet perhaps completely ſatisfactory. With the majority of thoſe who have been moſt extenſively engaged in the practice of vaccine inoculation; the freedom from general puſtular eruption, and from the danger of inviſible contagion, are concluded to be no leſs certainly characteriſtic of the diſeaſe, than the particulars which have been ſtated under the preceding heads:—and the caſes which are produced in ſupport of the oppoſite concluſion, are conſidered as caſes in which a variolous contamination has unwarily been introduced; either into the matter of inoculation, or the conſtitution of the patient under the vaccine treatment.—Dr. Jenner, who muſt be allowed to have ſurveyed the evidence on its

its moſt extended ſcale, and to have appreciated its weight and bearing with the greateſt accuracy, ſeems fully perſuaded, that maturating puſtules form no part of the character of the genuine vaccine diſeaſe, under any of its ſhapes :—and alſo that this diſeaſe is to be transferred only by inoculation*.—The latter poſition is probably dependent on the former : for there does not appear to have been even a ſuſpicion of contagion from effluvia, except in caſes of an attendant eruption. Taking, for the preſent †, the affirmative of both ; they are juſtly to be conſidered as circumſtances of very material import on this occaſion ; in as much as they place in a ſtriking view the ſuperior advantages of the vaccine over the variolous inoculation.—They remove at once the objections which have been taken againſt it ; unwarranted as it would ſeem by obſervation of the actual phænomena of the diſeaſe ; on the ground of introducing into human ſociety a new and loathſome diſorder, which it might not be eaſy to reſtrain.

It has been thought by many, that the practice of inoculation of the ſmall-pox, which every one knows to be contagious by its effluvia ; has, on the whole, contributed to increaſe, rather than leſſen the general mortality occaſioned by that diſeaſe ; becauſe a very large claſs of ſociety have ever reſiſted the practice of its inoculation ; and have at the ſame time been hereby much more frequently expoſed to its influence. But in the Cow-Pox, we perceive an agent completely under our command and management ; and conſequently affording us an opportunity of exterminating for ever the ravages of that moſt deſolating malady the ſmall-pox, from the human race.

---

* Vid. See his laſt publication, " Continuation of Facts," &c.

† Vid. Chap. IV. where the ſubject is again conſidered.

Eighthly. There has not appeared in the Inoculated Cow-Pox, any tendency to produce or to bring into activity any particular diſeaſes, to which a prediſpoſition may have exiſted in the conſtitution; Such as ſcrophula, or other chronic affections of the ſkin and glands, which have not unfrequently been known to ſhew themſelves after the ſmall-pox in its mildeſt forms.

This is a circumſtance, which, if it ſhall receive confirmation from our farther acquaintance with the nature and effects of the vaccine diſeaſe, will deſerve to be ranked high in the advantages it affords. At preſent, the evidence, which of courſe is of the negative kind, has been uniform and unexceptionable. Dr. Jenner ſpeaks with increaſed confidence on this part of the ſubject*: and his teſtimony is ſupported by the whole hiſtory of the diſeaſe ſo far as I have been able to examine it.

Moſt of the OBJECTIONS which have been urged againſt the vaccine inoculation, are virtually included and anſwered in the eight particulars which I have juſt laid down; and indeed the objectors themſelves for the moſt part, have of late been ſilent, or with an honorable candour and ingenuouſneſs, have acknowledged, that a better acquaintance with the ſubject has diſpelled their doubts and removed their apprehenſions†.

---

[*] See Continuation, &c. at the concluſion.

[†] See a letter from Mr. Cooke of Glouceſter, dated May 29, 1800, publiſhed in the Medical and Phyſical Journal, vol. iv. page 21.

Vague reports are ſtill in exiſtence of perſons having ſuffered and even died of the ſmall-pox, who had previouſly undergone the Cow-Pox :—but the reality of the occurrence remains yet to be ſhewn ; and whoever will take the trouble, as I have repeatedly done, to examine into the grounds of ſome of theſe rumours ; will only be ſurprized that any degree of credit whatever, ſhould have been given to ſuch ſlimſy allegations.—If on impartial conſideration any individual caſe or caſes ſhould appear which would beget a ſuſpicion to this effect ; we have only to oppoſe to them the immenſe maſs of evidence already obtained on the contrary ſide, and leave it to time and further obſervations ultimately to decide the queſtion. After all, a ſingle inſtance, or even more of the kind, though fully eſtabliſhed, would yet avail but little ; ſince it muſt be remembered, though it has not been accounted for ; that a few ſimilar caſes are on record, in which the ſmall-pox itſelf appears to have been twice ſuffered, and that in the natural way, by the ſame perſon, whoſe life has fallen a ſacrifice to its ſecond attack*.

Slighter degrees of infection happening repeatedly to the ſame perſon, viz. ſuch as conſiſt in a puſtule or puſtules merely local, as in the caſe of nurſes, and thoſe who are much employed about the perſons of patients under ſmall-pox ; are familiar to every ones obſervation, and have often been made uſe of to diſcredit its inoculation. Whenever inſtances of this kind are brought forward ; the utmoſt care is requiſite to aſcertain whether the firſt or ſecond alledged occurrence of the diſeaſe, belong to this claſs of local affection; or to the general diſeaſe of the conſtitution.—In like manner in the Cow-Pox; it is evident that perſons may be affected either in the caſual or inoculated way, with theſe local puſtules or veſicles, without undergoing the whole febrile diſeaſe of the ſyſtem; and as this diſeaſe is ordinarily ſo ſlight and tranſient, there is then more danger of being thus deceived into a ſecurity, when in fact the ſyſtem has not undergone that kind of affection which alone can be depended upon for affording ſubſequent ſafety from the ſmall-pox.

---

* See particularly a caſe recorded by Mr. EDWARD WITHERS, Surgeon of Newbury, Berks, in the Mem. of the Medical Society of London, Vol. iv.

See alſo other caſes recorded by Dr. JENNER.

An apprehenſion has been entertained by ſome perſons, who profeſs themſelves ſatisfied with the evidence of the *preſent* ſecurity obtained againſt the ſmall-pox, by means of the Cow-Pox inoculation: leſt, *after ſome diſtance of time*, the conſtitution ſhould again become capable of receiving it.—As this is an opinion altogether conjectural, it might be ſufficient to ſhew its deviation from all juſt analogy; ſince from the acknowledged ſimilarity between the Cow-Pox and the ſmall-pox; and from the aſſurance of the conſtitution which has once paſſed through the latter, being ever afterwards ſafe from its attack; there is every reaſon to conclude that whatever, like the former, has the power of producing in the ſyſtem the ſame change for a few months or years, will be found to render it no leſs permanently ſecure for life.—In the caſe of *Caſual* Cow-Pox, it has been ſhewn that facts are directly oppoſed to this apprehenſion, and there ſeems very little reaſon to doubt, that the inoculated diſeaſe will afford a protection equally ſafe and durable.

There is yet one objection to which the foregoing obſervations have no reference; becauſe it does not enter into the merits of the ſubject, but ſuppoſes the whole enquiry to be unneceſſary and uſeleſs.

It is ſometimes plauſibly argued, and that by medical men as well as others, againſt the introduction of the new practice; that the inoculated ſmall-pox, *under proper management*, is ſo generally a mild and innoxious diſeaſe, that it requires, and even admits of no improvement.—I am willing to concede a great deal to the import of the proviſional clauſe in the three words diſtinguiſhed by italics; having long been convinced that the conduct and ſucceſs of inoculation, are not ſuch matters of courſe as they ſeem to have been conſidered. The remarks on the ſubject of inoculation generally; contained in Dr. JENNER's firſt publication on the Cow-Pox, afforded me the higheſt ſatisfaction; and I often expreſſed my opinion at the time, that whatever might be the fate of the practice he was recommending, a moſt valuable purpoſe would be anſwered by the work, if it ſhould obtain from medical practitioners, to this part of the ſubject only, the attention which it deſerved.—My obſervations in this practice have often reminded me of the expreſſion of a celebrated profeſſor in London *, who, when in his lecture he was ſhewing the comparative reſults of inoculated and natural ſmall-pox; and ſtated the average number of deaths in the former; was accuſtomed always to diſtinguiſh the manner in which it was conducted. His opinion eſtimated the proportion of deaths in natural ſmall pox at one in every ſeven, who had the diſeaſe:—and in inoculation, at one in five hundred: whereas, he added, it would not exceed one in a thouſand, *if properly performed*. It would lead me too far from my preſent purpoſe to enter at large on on this ſubject, by adducing, as I could, a variety of facts and obſervations, which corroborate the aſſertions of Dr. JENNER on this topic; and which powerfully enforce the cautions he has ſuggeſted in the affair of inoculation generally, reſpecting the choice of the matter, the mode of its preſervation for uſe, and the manner of performing the operation.—It will be proper hereafter, to conſider theſe particulars as they apply to the Cow-Pox:—but in the mean time to return to the point from which I have been digreſſing,

---

* Dr. GEORGE FORDYCE.

Were it undeniably true, that the inoculated ſmall-pox, under any, even the beſt ſort of management hitherto deviſed; proved itſelf univerſally as mild and ſafe as in ſome inſtances it certainly appears; the objection, or rather the previous queſtion which has been ſtarted, would be concluſive againſt the neceſſity of any farther experiments:—and then too, probably, having been more generally adopted, its benefits would have been ere now diffuſed to a much greater extent in ſociety. At preſent, it muſt be confeſſed, that from various motives, the practice is declined or reſiſted by a numerous claſs, who are not ſufficiently ſenſible of the advantages it really offers in preference to the chance of the natural infection. The difference in the proportion of deaths—of dangerous illneſſes—of deformities—and of ſubſequent diſeaſes; might well be ſuppoſed to have eſtabliſhed for the inoculating practice, a decided and univerſal preference.

It is now eſtimated that by the natural ſmall-pox one in every ſix or ſeven patients is cut off: and every one knows how ſevere and formidable it often proves, even where life is ſpared. The ſame diſeaſe communicated by inoculation, as generally managed, is

thought

thought to prove fatal upon an average only to one in about three hundred: and to be accompanied with ſevere and dangerous illneſs to one in thirty or forty. Wherever this ſeverity and danger exiſt; it is connected with numerous puſtules, which render this diſeaſe *really* a loathſome one; and generally occaſion more or leſs deformity of the ſkin:—and in thoſe inſtances, where neither death, danger, nor deformity are ſuffered, ſtill there is always a degree of well-founded apprehenſion, leſt other diſeaſes ſhould afterwards ſupervene.

Now if any one will take all theſe circumſtances into account; reflecting at the ſame time how much the anxiety or diſtreſs occaſioned by the infliction of any of theſe calamities; is in moſt minds aggravated by the idea of their having been incurred by their own immediate and voluntary agency:—recollecting alſo that ſuch hazards are to be encountered after a variety of precautions have been taken, ſuch as avoiding particular ſeaſons, and particular ſtates of the conſtitution, viz. teething in children, pregnancy in adults, &c. &c. which are known to be ſo unfavourable to the ſucceſs of ſmall-pox inoculation, as for the moſt part to preclude it entirely:—if, I ſay, all theſe conſiderations are attended to; I can hardly conceive the concluſion poſſible; that the vaccine inoculation, which without any ſuch precautions in the choice of ſubjects or ſeaſons, is acknowledged to be exempt from every one of the above-mentioned evils; can be regarded as an unneceſſary or uſeleſs innovation.

I ſhall take the liberty of adding a few thoughts

ON THE CONDUCT OF THE INOCULATION.

IT has happened, rather perverſely, in the buſineſs of Inoculation, as on many other occaſions; that uncommon facility in the management of the proceſs, has become the ſource of numerous errors. Perſons, for want of attending to the principle, and miſtaking the obvious eaſe and ſimplicity which is the very perfection of the proper mode, for an indifference to all modes, and an indiſcriminate adoption of them; have been led into a confuſed kind of practice, the ill ſucceſs of which has eſſentially lowered its real ſtandard of merit and utility in the public eſtimation.—But without adverting more particularly to this ſubject, ſo happily elucidated by Dr. JENNER in his "Inquiry"; I ſhall briefly point out, for the information of thoſe who may not have attended to the vaccine practice, the ſeveral methods of communicating the diſeaſe;—the proper period for taking the matter; and the way in which it may be preſerved, ſo as to retain its activity for a certain length of time:—together with a few circumſtances neceſſary to be attended to, in order to an aſſurance of the patient having paſſed through the diſeaſe in ſuch a manner as in future to exempt him from all danger of variolous contagion.

In the firſt place, it is of the utmoſt importance that a perſon entering on the buſineſs of Cow-Pox Inoculation; ſhould obtain his firſt ſupply of matter from an undoubted ſource of the genuine unadulterated diſeaſe—i. e. either from the original diſeaſe in the animal; or from a true inoculated Cow-Pox veſicle, as heretofore

heretofore deſcribed; and unattended with maturating eruptions. It is further neceſſary, or however prudent, in a ſeries of vaccine inoculations; if, from any cauſe whatever, an eruptive caſe ſhould preſent itſelf, to avoid moſt carefully the propagation of the diſeaſe under this ſuſpicious modification.

The fluid, as has been ſtated, continues limpid in the veſicle throughout the whole period; or nearly ſo: but it has been found to poſſeſs different degrees of activity in different ſtages. In general, it is conſidered allowable to take it for the purpoſe of inoculation, at any time between the fifth or ſixth and ninth or tenth days. Perhaps the ſooner after the fifth or ſixth, the greater is its ſpecific power. At any rate, the matter ought never to be uſed when it has loſt its pellucid appearance: and when the diſeaſe has attained its height, and the veſicle begins to dry; the ſpecific power can no longer be relied upon:—but an uncertain, or it is poſſible, even a dangerous impregnation, may be derived in its ſtead*.

If the ſituation of the parties will admit of it, there is an advantage in transferring the matter at once, in its recent fluid ſtate, from the veſicle to the arm of the patient to be inoculated; as in that caſe the infection is more certainly communicated, and the operation more lightly and quickly performed: beſides, that where a number are to be inoculated at once, the fluid matter is much more readily diſtributed.—In this ſtate, a very ſmall portion of it on the point of a lancet, carefully introduced underneath the cuticle, by an oblique puncture of it;—or, a ſmall ſcratch, juſt ſufficient to reach the cutis, with the lancet held perpendicularly; and having a minute drop of the infectious fluid depending from its point, will rarely fail to convey the diſeaſe.

---

* This ſuggeſtion, which when written, I conſidered as warranted by ſome caſes of inoculation for the ſmall-pox, that have fallen under my obſervation; has been remarkably exemplified in an account of vaccine practice, which I have met with ſince the above went to the preſs. Vid. Medical and Phyſical Journal, vol iv. page 448.

Where the matter cannot be made uſe of immediately, it may be received on the point of a lancet, which ſhould be dried gently by the fire and charged afreſh, two or three times ſucceſſively; and then carefully wrapped up ſo as to exclude the air as much as poſſible. In inoculating with this lancet, more care will be neceſſary than in the former inſtance, to bring the matter, firſt moiſtened with ſteam or warm water, into certain contact with the ſkin, by means of a puncture or ſlight inciſion.

Another way of taking the matter is on glaſs, or a quill; on which it is to be dried as before, and kept wrapped in a piece of leather, or bladder, in a well ſtopped bottle. From theſe likewiſe it may eaſily be transferred to a ſmall ſcratch or inciſion of the cuticle.

But the moſt common method of preſerving vaccine matter in its dried ſtate, is on coarſe white thread, which has been charged by applying it to the punctured part of a veſicle; and afterwards dried, and excluded from the air by careful encloſure. When the infection is to be conveyed from this thread, I have found it beſt to abrade a ſmall part of the tegument, by fretting it with the point or ſhoulder of a lancet, till I have deprived it of its cuticular covering to the extent of about the eighth of an inch; which will expoſe three or four of the minute points of extreme veſſels in the ſkin below. On this abraded ſurface I carefully place a ſmall piece of the infected thread, moiſtened, and cover it for eight and forty hours at leaſt, with adheſive plaiſter.

When performed with the recent fluid matter, the operation commonly ſucceeds. With the dry, under any management, it ſometimes fails:—and the probability of its failure will be in proportion to the time and circumſtances of keeping.—With tolerable care and encloſure as above recommended, it is generally found active at the end of two, three, or more weeks; and there are inſtances of its ſucceeding at the diſtance of as many months. It has been conveyed from this country to different and diſtant parts of the continent, and of the ocean, without prejudice to its infecting efficacy.

The infection, when it ſucceeds, becomes viſible about the ſecond or third day; when the inflamed ſpot, if viewed through a ſmall magnifier, will diſcover itſelf to be a tumour with an eryſipelatous ſurface, faintly tinged with yellow, or light orange colour, diffuſing itſelf, not all around, but to ſome one ſide of the puncture. From this time the local affection advances in the manner deſcribed under the head No. 3, in the laſt chapter.

But, if inſtead of this moderate inflammation about the third day, a more violent degree of it ſhould have taken place; and eſpecially with the formation of a fluid diſcharging itſelf from its centre:—or, if after it has proceeded with apparent regularity till the ſixth or ſeventh day; it then declines, as if it had already reached its criſis; or otherwiſe, ſuddenly paſſes into a ſtate of ulceration; a failure of the operation, notwithſtanding any ſlight indiſpoſition which may happen about the ſame period, is pretty certainly indicated.—It may be added that any remarkable deviation from the uſual and regular appearances which have been heretofore deſcribed; ſhould ever render the practitioner ſuſpicious of its event, and careful to obtain ultimately the deſired ſecurity and ſatisfaction.

On the Subject of MEDICAL TREATMENT,

HAPPILY there is little to be ſaid.—For myſelf, I have never found it neceſſary to adminiſter any medicine whatever for the conſtitutional diſeaſe; and very little, either before or after its occurrence. In the opinion that moderate cathartics are not without their uſe after the decline of eruptive febrile diſeaſes; I have ſo far admitted the analogy in the caſe of Cow-Pox, as to employ them more or leſs, as circumſtances have appeared to direct. It is mentioned alſo, I obſerve by Dr. Woodville, that where the febrile ſymptoms run higher than uſual; or are of longer continuance, as is ſometimes the caſe in adult patients; a briſk purgative has been greatly beneficial.

In the management of the arm when it has paſſed into a ſtate of ulceration, I have always found the plans laid down by Dr. Jenner, efficacious *. The moſt ſimple, is that of applying as ſoon as the tendency diſcovers itſelf, which is commonly about the tenth or eleventh day; a few drops of the Aqua Lithargyri

---

* "Further Obſervations," page 176.

acetati, (Goulard's Extract) ; ſuffering it to dry upon the part, and then covering it to the extent of the ſurrounding inflammation, with a piece of ſoft linen cloth, dipped in cold water, and renewed as often as it becomes dry, till the purpoſe is anſwered. Should the ulcerous diſpoſition reſiſt the effect of this ſimple treatment ; it becomes adviſeable to deſtroy at once the ſpecific inflammatory action in the part, by the application of the ſtronger mercurial ointment ;—the ointment of nitrated quickſilver ;—or by the cauſtic operation of a ſmall particle of mineral acid, or ſome active ſubſtance of the kind ; confined for a ſhort time in contact with the ſore. After this has been done, the healing proceſs quickly commences, and with the moſt ſimple dreſſings, regularly proceeds to cicatrization.

CHAP. IV.

PRACTICAL OBSERVATIONS, &c.

THE following tables, deſigned to exhibit the reſults of the author's own practice in the vaccine inoculation; are extracted from others on a ſimilar plan, but a much more extended ſcale. Theſe larger tables contain a regiſter of the caſes as they occurred; and ſhew the particulars, both of the local infection, and of the conſtitutional diſeaſe; in three, four, or five diſtinct obſervations on each caſe: accompanied with occaſional remarks, which are here thrown into the form of notes. It was firſt deſigned to have publiſhed them at full length; but on a careful inſpection, there appeared ſo much ſimilarity in the details of the caſes in general, that they would not be found to repay the trouble of looking them over; when the purpoſe would be anſwered equally well by a more conciſe deſcription. At the ſame time, they appeared too bulky to be brought within the compaſs of the preſent undertaking. The common appearances of the inoculated part in the ſucceſſive ſtages of the diſeaſe; and the particulars of the indiſpoſition, where any occurred; are ſufficiently pointed out under the third head of the preceding chapter.

In the tables here preſented therefore, theſe common appearances are characterized as briefly as poſſible; whilſt the circumſtances deemed moſt material to be attended to in every caſe, are diſtinctly pointed out;—viz. ſuch as regard the ſubject;—the matter employed;

employed;—its efficacy in producing the diſeaſe;—the termination of the local affection in the arm;—the general nature and degree of the conſtitutional diſorder;—and above all, the peculiarities obſervable in certain inſtances.

The peculiarities moſt worthy of notice, reſpect the two circumſtances of

ULCERATION OF THE INOCULATED ARM;—

and the appearance of

GENERAL CUTANEOUS ERUPTIONS.

The termination of the inoculated vaccine veſicle in an ulcer; appears by the reports of all the inoculators to have occurred much more frequently in the early hiſtory of this practice, than of late. With ſome indeed, even from the firſt, it ſeems to have been a rare occurrence *; whilſt to others, it preſented itſelf ſo frequently, as to become an object of very particular regard in the treatment †.

From the moſt careful examination he has been able to make of the practice of others in this reſpect, and from the reſults of his own; the writer has been led to form the opinion that this ulceration is probably owing to certain changes which the matter of inoculation has undergone *by being kept for a length of time*; though theſe changes do not deprive it at the ſame time of its ſpecific efficacy. To this circumſtance of being kept too long; the matter was of courſe much more liable in the infancy of the practice, when it was often obtained with difficulty; and the propagation of the diſeaſe had greater obſtacles to contend with, than at preſent. From the following tables it is evident, that, although ulcerated arms have not followed in *every* caſe in which old or ſtale matter was employed; yet they were not uncommon in the beginning of the ſeries of experiments recorded; when of neceſſity ſuch kind of matter was more frequently made uſe of: whereas in the latter part of the hiſtory, no ſuch appearance has preſented itſelf:—and from firſt to laſt not a ſingle inſtance in any of thoſe inoculations which were performed with the *recent fluid*.

---

* Dr. **Woodville** ſaw but one inſtance in upwards of ſix hundred caſes. Vid. his "Reports".

† Vid. Dr. **Jenner**'s "Further Obſervations", page 104.

On the queſtion, how far GENERAL CUTANEOUS ERUPTIONS of the puſtular, or of any other kind, form a part of the character of the Cow-Pox; I am not diſpoſed to venture an opinion: imagining, with great deference to the concluſions of Dr. JENNER and others; that the enquiry, on this part of the ſubject, has not yet obtained a deciſive and ſatisfactory anſwer.

Without entering therefore minutely, into the hiſtory of the various appearances which have taken place in this particular reſpect; or into the reaſonings employed to reconcile theſe varieties; I would wiſh to hold up the queſtion as an object of further reſearch; and in the mean time to ſtate ſuch facts relating to it as have occured within the circle of my own knowledge and obſervation.

The ſcarlet efflореſcence or raſh, which took place in ſeveral of theſe caſes;—and likewiſe the exiſtence of a few inflamed pimples ſcattered over the ſkin, and of tranſient duration, about, or after the criſis of the inflammation of the arm; ſeem generally admitted as not inconſiſtent with pure uncontaminated Cow-Pox. Both theſe are recognized by Dr. JENNER, and other writers on the ſubject. The only point on which the obſervations and opinions of different practitioners ſeem to be at all at variance, is the appearance which occaſionally preſents itſelf of PUSTULAR ERUPTIONS, *proceeding to maturation like thoſe of ſmall-pox.* Could the preſence of theſe puſtules, in patients under the Cow-Pox inoculation, be as ſatisfactorily accounted for in *every* inſtance in which they have appeared, as they have been in the great majority of caſes; eſpecially thoſe which occurred in the early part of Dr. WOODVILLE's experience in the ſmall-pox hoſpital over which he preſides; the queſtion might be laid at reſt. The co-exiſtence of ſmall-pox contagion being fully aſcertained, there would be no doubt as to the ſource of the variolous-like eruptions:—though the mode in which that contagion was introduced; and the laws which govern the action of the two diſeaſes when thus combined; would ſtill remain to be inveſtigated. Neither would there be any difficulty in accounting for the propagation of an eruptive diſeaſe, where variolous contamination had once happened to the ſtock whence the matter was obtained. In *moſt* of the other recorded caſes alſo, wherein theſe eruptions have diſcovered themſelves; it may be allowed that the ſmall-pox has either been actually at hand, or known to prevail within ſuch a diſtance, as to afford a well-grounded ſuſpicion of its having been introduced into the conſtitution about the ſame time with the vaccine diſeaſe.

With all theſe conceſſions, however; ſtill I ſuſpect there have been inſtances of maturating puſtules in caſes of the Cow-Pox; the origin of which cannot be thus readily traced. The tables exhibit three inſtances of theſe eruptions in ſeventy caſes.—In one they are clearly accounted for from the preſence of the ſmall-pox in the houſe at the time *: (ſee caſes 37 and 38.)—In another, (viz. caſe 48), variolous contagion, though not impoſſible, could hardly be ſuppoſed.—In the third (viz. no 5), the ſmall-pox certainly had not been known in the neighbourhood for many months; nor was the child either before, or during the inoculation, taken from home. It is true, the maturation did not take place in the uſual and regular way of ſmall-pox; but a few only, out of a greater number of what appeared at firſt to be pimples, arrived at this termination, late in the diſeaſe. This appearance has been noticed by Dr. JENNER *, who ſpeaking of theſe inflamed pimples, ſays, the greater part of them diſappeared quickly, but "*ſome have remained long enough to ſuppurate at their apex.*" And he offers an explanation, by comparing it to the effect of local cuticular inflammation, ariſing ſpontaneouſly, or from the application of acrid ſubſtances, as Cantharides, Burgundy pitch, &c. exciting cutaneous affections in a part diſtant from their immediate action.

I have lately been told of others of my patients, in whom this circumſtance took place after I had ceaſed to viſit them; but I have not choſen to inſert in the tables, any accounts on the accuracy of which I have not a perfect reliance. And it might alſo be mentioned, that ſome of the gentlemen to whom I have tranſmitted vaccine matter, have informed me of the occurrence of puſtules in many of their patients;

---

* Vid. "Continuation, &c." page 149.

though I have no means of judging, whether in theſe inſtances, there was any evident or ſuſpected ſource of variolous mixture. But one appearance I have met with, which is too remarkable to be paſſed over.—In the month of Auguſt laſt, a child was ſhewn to me by my friend Mr. Fowke, ſurgeon at *Wolverhampton*, who had been inoculated by him with vaccine matter ſent from me. On this patient, there appeared an eruption, not of maturating phlegmons reſembling the common variolous puſtules, but of true Cow-Pox veſicles, broad, flattened, and containing a limpid fluid; which afterwards terminated in deſiccation and ſcab. I was much ſtruck with the appearance at the time, and enquired whether there was any reaſon to ſuppoſe that theſe veſicles, which were only *two* in number, had been occaſioned by any accidental conveyance of the fluid from the inoculated part in the arm. The mother had no reaſon whatever to ſuppoſe that this had been the caſe, but conſidered them as eruptions belonging to the diſeaſe in the conſtitution.—Mr. Fowke likewiſe believed them to be ſecondary eruptions.

The grounds of this opinion, as well as other remarkable circumſtances connected with the caſe, which to me appears perfectly ſingular in the hiſtory of the Cow-Pox; will be ſeen in the account which at my requeſt, he has done me the favour to tranſmit to me, and which I ſhall here inſert without farther comment.

"Dear Sir,

"Having moſt unfortunately omitted to "take notes of the ſymptoms as they aroſe in the eruptive caſe of Cow-Pox, you ſaw at *Wolverhampton*, "it will not be in my power to ſend you a very correct "or minute ſtatement of it; but will give you the beſt

" I can from recollection, aided by dates in my day-" book. On Saturday, Auguſt 9, Mr. MATTHEWS's " daughter, aged ſeven, broke out very thick with " ſmall-pox, in the natural way.—On the tenth, I " inoculated his ſon, aged four, in both arms with " vaccine matter, (had from you), which not taking " effect, was repeated on the twelfth; from which " inoculation the left arm inflamed, not with any un-" uſual violence, and unattended with indiſpoſition, " at leaſt in any perceptible degree, till about the " twenty-third or twenty-fourth, when he became " tedious, ſlightly feveriſh, ſick at times, and his eyes " looked heavy. About this period two ſmall inflamed " pimples appeared; one on the temple, the other on " the right thigh; which, when you ſaw them, on the " twenty-ſixth, had formed into veſicles of the true " Cow-Pox. The puſtule on the arm was now ſcabbed " and drying, and the inflammation nearly or altogether " ſubſided. The veſicles on the temple and thigh be-" gan to dry and ſcab on the twenty-ninth; or about " the fifth day from their firſt appearance. Both chil-" dren ſlept in the ſame bed, and were together during " the day.

" I am inclined to think theſe the true ſecondary " eruptions, unleſs we can be allowed to ſuppoſe the " child to have again inoculated himſelf, by rubbing " the veſicle, and touching or ſcratching the parts where " theſe puſtules appeared. He had no other eruption.

" With matter taken from the puſtules on the tem-" ple and thigh, I inoculated three patients, each of " which had a profuſe eruption of puſtules*.—From " the inoculated arms of theſe, I inoculated three other

---

* Of the common variolous kind I underſtand.

children,

" children, previous to the appearance of eruptions in
" thoſe from whom the matter was taken. They had
" all eruptions in a degree equally profuſe.

" You will, I am afraid, find the caſe imperfect,
" but you will uſe it as you think proper—I am only
" ſorry I cannot ſend you a better hiſtory.

" I remain, dear ſir, &c.

" THOMAS FOWKE."

Having now, as I conceive, ſtated ſufficient grounds for the degree of ſuſpence which I entertain on the queſtion, whether general eruptive puſtules form any part of the character of the vaccine diſeaſe, I ſhall for the preſent take leave of the ſubject:—but not without expreſſing my decided aſſurance, that however this queſtion may be eventually decided, there has occurred hitherto in the hiſtory of this diſeaſe nothing to deter the moſt cautious from engaging in the inoculation of it, with due attention to its circumſtances and progreſs.

TABLE

TABLE

OF

CASES.

N. B. When the matter is here characterized as Recent, it was for the moſt part transferred at once in a fluid ſtate, from one patient to another. In a few of theſe inſtances it was dried on a Lancet and uſed the ſame day.—When dry matter was uſed, it had been preſerved on Lancets, or moſt commonly on Thread; and the mode of Inoculation was accordingly by puncture, ſlight inciſion, or abraſion.—The words SLIGHT INDISPOSITION, frequently uſed in theſe Tables, are deſigned to expreſs a general uneaſineſs, peeviſhneſs, or reſtleſsneſs, ſometimes with perceptible changes in the heat of the ſkin; ſometimes without: and commonly in children, indicative of ſmall deviations from perfect health.—Dry ſcab imports a perfect healing of the part afterwards.

	SUBJECT.		*Matter of Inoculation.*			*Local Affection.*	GENERAL DISEASE.	
No	NAME.	AGE.	whence obtained	How long kept.	On what day of the diſe. taken.	Termination of the Inoculation in the Arm.	Nature and Degree of the Conſtitutional Indiſpoſition.	Eruptions; where any appeared.
*1	*Arch. Kenrick,*	10 Months	Dr. G. Pearſon, London.	Not known.	Not known.	In ulceration in both arms.	Vom. once, ſtart. in ſleep, & reſtl. 8 & 9th days.	A few ſcattered inflamed pimp. from the 8th to the 12th d. without matura.
2	*Turton Penn,*	4 years.	Ditto.	Ditto.	Ditto.	Ditto.	2 reſtleſs nights, the 8th and 9th.	
3	*Samuel Nicklin,*	3 years.	From No. 2.	55 days.	9th.	Failed.		
4	*Han. Nicklin,*	3 months	— 1.	2 mos.	9th.	Ulceration.	Peeviſh. 8th & 9th.	
5	*— Smith,*	6 Weeks	— 2.	56 days	9th.	In a dry ſcab, without ulcer	As No. 4.	A few ſcat. pimpl. 3 or 4 of which on the feet maturated.
6	*Wm. Griffiths,*	5 months	As No. 1.			Failed.		
	Inoc. again		from No. 1.	2 mos.	9th.	Failed.		
			3d time — 5.	Recent	7th.	A dry ſcab.	Slight indiſpoſition 8th and 9th days.	A few inflamed pimples.
7	*— Jenkins,*	25 days.	As No. 1.			Failed.		
	2d time		from No. 1.	2 mos.	9th.	Failed.		
	3d time		— 5.	Recent	7th.	Dry ſcab.	Do. 8th & 9th.	
8	*Mary Burgeſs,*	5 years.	— 1.	2 mos.	9th.	Ulceration.	Do. 9th. 10th & 11th.	1 pimple on the face.
9	*Sarah Burgeſs,*	3 years,	— 1.	2 mos.	9th.	Failed.		
			2d time — 5.	15 days.	7th.	Dry ſcab.	Do. 9th & 10th.	A few tranſient pimp.
10	*Han. Burgeſs,*	6 Months	— 2.	11 wks.	9th.	Failed.		
			2d time — 6.	5 wks.	8th.	Failed.		
			3d time — 8.	Recent.	9th.	Dry ſcab.	Do. 9th & 10th.	
‡11	*Wm. Tonks,*	4 years.	— 6.	20 days.	8th.	Ulceration	No percept. indiſp	

‡12	*M. Ann Tonks,*	15 Months	No. 1.	9 wks.	9th.	Dry ſcab.	No indiſp.	
13	*John Danks,*	15 Months	— 6.	6 wks.	8th.	Dry ſcab.	ſlight indiſp. 10th.	A few tran. pimples

* Caſe 1. This caſe, with which my experience in the Cow-Pox inoculation commenced; was the leaſt pleaſant and ſatisfactory of any that have fallen under my obſervation. The child was ſuffering at the time from dentition, in ſo much that the inoculation, the mildneſs of which was not then fully underſtood, would have been deferred, had it not been for the prevalence of confluent ſmall-pox in the neighborhood — There was nothing however in the caſe to excite the leaſt uneaſineſs, till after the vaccine diſeaſe had paſſed through its expected courſe in the conſtitution.—The ulcers in the arms remained, and were doubtleſs a ſource of much irritation, added to the teething proceſs.—Theſe ulcerations might poſſibly have been checked in their commencement, had they not taken place UNEXPECTEDLY :—ſo much ſo, that the child had been taken from home with its mother, on a viſit, under the idea that the diſeaſe was over.—On the eighteenth day from the inoculation, the ulcers firſt became the objects of particular attention, and on the twentieth, the ſymptoms of dentition were ſo urgent as to induce me to lance the gums; an operation which was followed by immediate and conſiderable relief.—What connexion may have ſubſiſted between theſe circumſtances, and what I have further to mention, I will not undertake to determine.—In two days more, viz. on the twenty-ſecond, a ſwelling was diſcovered on the back, towards the apex of the trapezius muſcle, a little to the right of the ſpine. It was about the ſize of the half of a pigeon's egg, divided longitudinally; and, though evidently containing a fluid, was unattended with inflammation or diſcoloration of the ſkin. Notwithſtanding this, in a few days, the tumour enlarged, inflamed & ſuppurated; & burſt on the twenty-ninth day from the inoculation, diſcharging from two to three ounces of a thin mild lymph. After this it healed perfectly in eight days more, by which time alſo the arms were nearly cicatrized. During this period, the general health ſo far from ſuffering in any degree became perfectly re-eſtabliſhed; and with the exception of occaſional ſlight indiſpoſitions from teething, has remained perfectly good to the preſent time,—upwards of a year and half.

† Caſe 3. There was ſomething remarkable in this caſe.—Although no effect whatever, was produced on the arm by the inoculation; the child was affected with a ſmart febrile diſeaſe two days before his ſiſter, (No. 4, in whom the inoculation was effectual), began to complain.—An eruption of ſmall veſicles ſucceeded & quickly died away. That this diſeaſe had no other connexion with the vaccine inoculation, than the mere co-incidence in point of time, was then preſumable from the circumſtances; and was afterwards aſcertained by the child having the ſmall-pox regularly, in conſequence of a ſubſequent inoculation of both children with that diſeaſe. It is more than poſſible, that caſes ſimilar to this may have given riſe to ſome of the reports which have been circulated, adverſe to the power of the vaccine diſeaſe, in preventing the variolous.—See the note following: alſo a caſe recited by Dr. DAVIS of Bath. Medical and Phyſical Journal, vol. iii. page 106.

‡ Caſes 11 and 12. Both theſe children had the varicella or chicken pox, (which was then endemial) in the interval between the vaccine inoculation, and the height of the local affection in the arm. The eldeſt, (No. 11), was attacked with fever on the ſecond day after he was inoculated. On the third, the eruption appeared, and had vaniſhed on the fifth. After this, the Cow-Pox infection proceeded in its regular courſe. In the younger child, (No. 12), the febrile attack of the varicella was a day later and more ſevere. It went through its ſtages in the ſame regular manner, but evidently retarded the progreſs of the Cow-Pox.—In the end, however, the Cow-Pox exhibited its uſual characters, progreſſion and periods in the arm;—but without conſtitutional diſeaſe.

SUBJECT.			Matter of Inoculation.			Local Affection.	GENERAL DISEASE.	
No.	NAME.	AGE.	whence obtained	How long kept.	On what day of the diſ. taken.	Termination of the Inoculation in the Arm	Nature and Degree of the Conſtitutional Indiſpoſition.	Eruptions; where any appeared.
14	— *Trueman,*	7 wks.	from No. 6.	10 weeks	8th.	Failed.		
			2d time — 4.	2 months	7th.	Ditto.		
			3d time — 5	2 months	9th.	Ditto.		
15	*Martha Edge,*	5 months	Vac. Inſt. London			Dry ſcab.	No percept. Ind.	
16	*Rebc. Kenrick,*	Ditto	from No. 15.	Recent	6th.	Ditto.	Slt. ind. 12th. d.	
17	—*Whitehouse,*	4 years	Vac. Inſt.	Unkno.		Ditto.	Ditto 10th day	
18	—*Buffery,*	18 months	from No. 17.	Recent	8th.	Ditto.	No Indiſpoſition	
19	*Suſ. Mackinzie,*	5 months	Vac. Inſt.	Unknow		Ditto.	Slt. ind. 8th day	
20	—*Hopkins,*	4 years	from No. 19.	11 days	7th.	Ditto.	Ditto, 9th day	
§21	—*Williams,*	7 months	— 17.	5 days	8th.	Ditto.	Ditto.	
22	—*Tonks,*	11 weeks	— 20.	Recent	10th.	Ditto.	Slt. ind. 9th day	
23	*Jas. Rider,*	6 years	—22.	Recent	8th.	Ditto.	No percept. ind.	
24	*Jos. Rider,*	4½ years	—22.	Recent	8th.	Ditto.	Ditto.	
25	*Eliz. Rider.*	4½ years	—22.	Recent	8th.	Ditto.	Slt. ind. 9th day	
26	*Chas. Rider,*	2 years	—22.	Recent	8th.	Ditto.	Ditto, 7th	
27	— *Twiſs,*	9 weeks	—24.	Recent	10th.	In a dry ſcab	Sick & reſtl. 7th.	A ſcarlet raſh 10th d. & a few pimples, which once ſeemed tending to maturate, but did not.
28	—*Griffiths,*	8 months	—24.	1 day.	10th.	Ditto.	reſtl. 11th night.	
29	*Mark Siddons,*	3 years.	—21.	3 days	8th.	Ditto.	Ind. 13th day, apparently from pain in the arm.	A ſcarl. raſh over body the 13th day.

*30	*Charl. Rider,*	4 years.	—24.	5 days	10th.	Failed.	
			2d time—21.	27 days	8th.	Infected.	Small-pox broke out on the 5th day from the Vac. Inoc the veſicle took the appearance of a variolous puſtule.
†31	*John Rider,*	2½ years.	—21.	27 days	8th.	Dry ſcab.	Slt. indiſp. 11th day
†32	*Mary Rider,*	9 months	—19.	7 weeks	7th.	Failed.	
			2d time—27.	4 days	7th.	Dry ſcab.	Ditto, 12th
‡33	*Benj. Martin,*	2 years	—27.	Recent	7th.	Ditto.	Ditto, 7th
§34	*A. Dumareſq,*	6 weeks	—27.	Recent	7th.	Failed.	
			2d time—28.	Ditto	10th.	Dry ſcab.	No percept. indiſp.

§ Caſe 21. This child ſuffered pain from the arm on the eleventh day; and was relieved by a conſiderable diſcharge of fluid from under the ſcab:—which afterwards dried and healed in the common way. This circumſtance has taken place in a few others of the inſtances, but I have not thought any more particular notice of it neceſſary.

* Caſe 30. It was curious to obſerve the vaccine inoculation in this caſe. Previous to the attack of the fever of the ſmall-pox, the part appeared in its uſual form. Immediately on this attack, its activity ſeemed totally ſuſpended, and inſtead of a proper Cow-Pox veſicle accompanied with its characteriſtic inflammation, it became a ſimple variolous puſtule. Vid. note to caſe 37.

† Caſes 31 and 32. Theſe children were the brother and ſiſter of CHARLOTTE RIDER, No. 30, and were her conſtant companions by night and day: whilſt both diſeaſes went through their reſpective courſes as diſtinctly as poſſible.

‡ Caſe 33. This child was inoculated after his ſiſter broke out with the ſmall-pox; and was likewiſe her conſtant companion.

§ Caſe 34. There was conſiderable doubt in this caſe, whether the vaccine diſeaſe had taken place; The child was inoculated four times, though only two were thought neceſſary to be ſet down in the table. The firſt failed entirely. The ſecond was ſuppoſed to have failed likewiſe, when a third was performed. In two days more, however, it appeared that the ſecond had really taken effect; on which account the inoculated ſpot of the third was touched with a mild cauſtic, and its infection thus prevented or put a ſtop to. The ſubſequent appearances in the arm, however, were not perfectly ſatisfactory. Inſtead of the uſual veſicle and ſucceeding efflorescence, the part exhibited a kind of eryſipelatous appearance, more diffuſive on the ſeventh day than is common to this ſtage of Cow-Pox:—elevated in the centre, and of a yellowiſh or light orange coloured tinge. On the eighth it turned brown at its apex, and declined from this period. The fourth inoculation was deſigned to put the foregoing to the proof: It affected the ſkin with apparent ſpecific inflammation for a day or two, and then vaniſhed completely.

On inoculating this child with variolous matter, between four and five months after, I felt leſs ſecure than uſual of its eſcaping the diſeaſe.—The arm inflamed about the fourth day, and continued in that ſtate till the tenth, with little alteration. During this period, the child was much indiſpoſed with vomiting and coſtive bowels; complaints to which it was very ſubject, and which were perfectly removed by calomel purges in larger doſes than are uſually required by children at ſuch an age.—After this time the inflammation in the arm declined. Throughout the whole, however, there was no fever, nor a ſingle appearance of the variolous infection having been received into the conſtitution.

SUBJECT.			*Matter of Inoculation.*			*Local Affection.*	GENERAL DISEASE.	
No.	NAME.	AGE.	whence obtained	How long kept.	On what day of the in' taken.	Termination of the Inoculation in the Arm.	Nature and Degree of the Conſtitutional Indiſpoſition.	Eruptions; where any appeared.
35	*Thos. [illegible]ſſel,*	7 months	No. 27.	Recent	7th.	Dry ſcab.	Slt indiſp 9th. day	
36	*Wm. Gregory,*	4 years	—29.	Ditto	9th.	Ditto.	No indiſpoſition	
‖37	*Rob. Gregory,*	2 years	—29.	Ditto	9th.	Failed.	Sm.-pox broke out the 4th day from inoc. vac. veſicle took the appearance as No. 30 of a variolous puſt. only remarkably flaccid and devoid of inflammation.	
			2d time—31.	Ditto	9th.			
¶38	*Mary Gregory,*	5 months	—29.	Ditto	9th.	Dry ſcab.	Slt. ind. 9 & 10th	On the 10th day ſom watery puſt. appeared, wch. maturated on the 13th. about 100 in all.
39	*Wm. Siddons,*	9 months	—29.	Ditto	9th.	Ditto.	No indiſpoſition	
40	*Sam. Clift,*	3 years	—27.	5 days	7th.	Failed.		
			2d time—33.	Recent	7th.	Ditto.		
			3d time—41.	Ditto	7th.	Dry ſcab.	Slt. Ind. 11th.	A few trans. pimp: 11 day
41	*—Holland,*	9 weeks	—42.	Ditto	9th.	Dry ſcab.	No indiſpoſition	
42	*Wm. Johnſon,*	2½ years	—27.	Ditto	7th.	Ditto.	Ditto	
43	*—Spittle,*	4 months	from No. 19.	3 months	7th.	Recent.	Slt. indiſp. 9th	
44	*—Griffiths,*	4 months	—19	Ditto	7th.	Failed.		
			2d time—27.	6 weeks	7th.	Dry ſcab.	Ditto, 10th	A fewpimp.after the decl of the inflam. in the arm
45	*—Parkes,*	2 months	—19.	3 Mos.	7th.	Failed.		
			2d time—39.	7 weeks	9th.	Ditto.		
			3d time—47.	Recent	7th.	Dry ſcab.	No indiſpoſition	
46	*Wm. Morecroft,*	18 months	—43.	9 days	9th.	Ditto.	Slt. indiſp. betwee 7th & 10th days.	A few pimples.

47	*Han. Morecroft,*	6 months	from No. 29.	7 weeks	9th.	Failed.		
			2d time—39.	7 weeks	9th.	Dry ſcab.	Slt. indiſp. between 7th & 10th days.	A few pimples on the face & arms.
*48	*M. A. Ledger,*	6 months	—44.	Recent	8th.	Ditto.	Ditto, 9th & 10th	80 or 100 variolous-like puſt. appeared on 11th d. moſt of them maturated, but not all.
49	*—Nicklin,*	4 months	—48.	Ditto	8th.	Ditto.	Slight Indiſpoſition 9th day.	
50	*Jas. Siddons,*	5 weeks	—49.	7 days	8th.	Failed.		
			2d time—46.	30 days	9th.	Ditto.		
			3d time ——.	2 days	5th.	Dry ſcab.	A few ſtart. in ſleep 8th day.	
51	*Han. Hewitt,*	10 months	—48.	39 days	8th.	Failed.		
			2d time—49.	31 days	8th.	Ditto.		
			3d time ——	3 days.	5th.	In a dry ſcab	Slt. ind. 10 & 11th.	A few pimp. 11th d.

‖ Caſe 37. In this caſe, as in No. 30, the part infected in the arm with vaccine matter, diſcovered its uſual characters till the variolous contagion became active in the ſyſtem; and then loſt its peculiar appearance, and aſſumed that of a common ſmall-pox puſtule. The brother and ſiſter, (Nos. 36 and 38), the conſtant companions of the child, went through their proper vaccine courſe, notwithſtanding the preſence of ſmall-pox, as in the inſtances before recited—only that MARY (No. 38), had a conſiderable number of maturating puſtules—Vide. No. 38.

¶ Caſe 38. The puſtules in this caſe did not exactly reſemble thoſe of ſmall-pox. They acquired watery heads very quickly after the eruption;—then became of an opaque white; and after their decline, inſtead of forming into brown ſcabs; left red ſpots in the ſkin, like ſo many particles of dried blood:—in other places, like fading petechiæ.

* Caſe 48 This was an inſtance in which maturating variolous-like puſtules in conſiderable number, accompanied the vaccine diſeaſe, where no ſource of variolous contagion could be diſtinctly traced. After many minute enquiries on this head, I learned however, that the ſmall-pox had exiſted at a houſe, in a country place, at the diſtance of about a quarter of a mile from the reſidence of the child's parents, at the time of inoculation, and a few days afterwards; and near to which houſe it ſeems the Mother had daily occaſion to paſs; ſometimes with the child in her arms.—The whole family however left this reſidence the fourth day after the child was inoculated, and removed to a diſtant ſituation, where no ſmall-pox was then known to exiſt. The puſtules appeared on the 11th day, and moſt of them, though not all, went through the courſe, and had the appearance of ſmall, mild, variolous ones;—not in the leaſt affecting the health of the child.

SUBJECT.			Matter of *Inoculation.*			*Local Affection.*	GENERAL DISEASE.	
No.	NAME.	AGE.	whence obtained	How long kept.	On what day of the diſe. taken	Termination of the Inoculation in the Arm.	Nature and Degree of the Conſtitutional Indiſpoſition.	Eruptions; where any appeared.
52	*Eliz. Field,*	14 weeks	from No. 50.	Recent	7th.	Failed.		
			2d time—55.	Ditto	8th.	Dry ſcab.	Ditto, 5th & 6th day	
53	*John Baddely,*	6 weeks	—50.	Ditto	7th.	Failed.		
			2d time—56.	Ditto	6th.	Dry ſcab.	No indiſpoſition	
54	*Ann Biſſel,*	3 years	—50.	Ditto	7th.	Failed.		
			2d time—55.	Ditto	8th.	Dry ſcab.	Pale & a little dull 7th	
55	*Isaac Biſſel,*	8 months	—50.	Ditto	7th.	Ditto.	Slight ind. 7th day	
56	*Jos. Adams,*	8 months	—50.	Ditto	7th.	Ditto.	Startings in ſleep, 9th	
57	*Dan. Roſe,*	22 months	—50.	2 days	7th.	Ditto.	No indiſpoſition	
58	*Jas. Roſe,*	8 months	—50.	Ditto	7th.	Ditto.	Reſtleſs, 9th day	Scarlet raſh 12th day a few pimples.
59	*W. Cliffe,*	2 months.	—56.	Ditto	6th.	Ditto.	Reſtleſs with ſick. & ſtart. from 6 to 10th.	Raſh on the 10th d. afterw. a few pimp.
60	*—Biddulph,*	6 weeks	—56.	Ditto	6th.	Ditto	Reſtl. & ſtart. 9 & 10th	
61	*John Sheldon,*	5 years	—53.	Ditto	6th.	Ditto	No indiſpoſition	
62	*Matt. Sheldon,*	10 weeks	—53.	Ditto	6th.	Ditto	Reſtl. with ſtartings, 8th and 10th days	
63	*Han. Sheldon,*	3 years	—53.	Ditto	6th.	Ditto	Reſtl. & uneaſy 9th. and 10th	
64	*—Baker,*	3 years	—62.	Ditto	8th.	Ditto	Hot & reſtl. 8th day	

65	*A. M. Simcox,*	5 months	No. 59.	18 days	6th.	Ditto	Slt. indiſ. 6th, 10th and 11th days.	Slt. ſcarl. raſh 10th 2 or 3 pimpl. 12th
66	*H. Cartwright,*	4 weeks	—64.	3 days	10th.	Ditto	Reſtleſs 9th day	
67	*Henry Pratt,*	3 years	—65.	Recent	8th.	Ditto	No percept. indiſp.	
68	*John. Pratt,*	6 weeks	—65.	Ditto	8th.	Ditto	Reſtl 8th & 9th days	
69	*Amelia Bills*	15 months	—66.	Ditto	9th.	Ditto	No indiſpoſition	
70	*Eliz. Foſter,*	19 years	—66.	Ditto	9th.	Ditto	Head-ach, chillneſs, ſickneſs, and general indiſpoſition, 7th and 8th days.	

Of the above cited ſeventy caſes, (to which more might be added, but as they afford no particular inferences, it is deemed unneceſſary); twenty-eight were ſubſequently inoculated with variolous matter—the firſt fourteen of them about ſix, ſeven, and eight months after paſſing through the Cow-Pox—the others within a few weeks afterwards. In all of them the conſtitution equally and perfectly reſiſted its contagion, except the two inſtances, No. 3 & 14, where the vaccine inoculation failed and was not repeated, and in theſe the ſmall-pox took its uſual courſe.

It may be proper to add, for the information of thoſe who are unacquainted with the ſubject of inoculation; that where this operation is performed on perſons who have previouſly paſſed through the diſeaſe, either ſmall-pox or Cow pox, (as in the former it is often repeated for ſatisfaction in doubtful caſes), that the arm will ſtill manifeſt, in every ſucceſſive inſtance, ſome marks of the infection having taken place, LOCALLY.—The degrees of this local infection are various: in ſome it is ſlighter, and declines after two or three days: in others more conſiderable and of longer continuance.—Both are equally compatible with the ſecurity of the conſtitution.

PRINTED AT THE OFFICE OF J. BELCHER, [illegible], BIRMINGHAM.

AN
INQUIRY
CONCERNING
THE HISTORY
OF THE
COWPOX,
PRINCIPALLY WITH A VIEW TO
SUPERSEDE AND *EXTINGUISH*
THE
SMALLPOX.

By GEORGE PEARSON, M. D. F. R. S.
Physician to St. George's Hospital;
Of the College of Physicians, &c.

Feliciores inserit.——*Hor.*

LONDON:
Printed for J. JOHNSON, No. 72, St. Paul's Church Yard.
1798.

WELLCOME INSTITUTE LIBRARY

TO

SIR GEORGE BAKER, BART.

PHYSICIAN TO THEIR MAJESTIES,

F. R. S. &C. &C. :

Whoſe Medical Writings and pre eminent Learning reflect HONOUR ON THE PROFESSION OF PHYSIC:

This Work is inſcribed as an acknowledgment for promoting the preſent Inquiry, and as a public teſtimony of perſonal regard,

By his ever truly faithful,

And obedient ſervant,

GEORGE PEARSON.

Leiceſter Square,
Nov. 1798.

INQUIRIES *concerning the* COW POX.

THE curioſity of the public has been lately gratified by the publication of the long-expected treatiſe of Dr. Jenner,* on an epizootic diſeaſe, commonly known to dairy farmers by the name of the *Cow Pox.* This diſtemper of Cows has been noticed, time immemorial, in many provincial ſituations, where it has been alſo obſerved to have been communicated from theſe diſeaſed animals to the perſons who milk them. In the work juſt ſpoken of ſeveral facts are related, which ſeem to let new light into the nature of the animal œconomy, and to exhibit a near proſpect of moſt important benefits in the practice of phyſic. But as ſome of theſe facts do not accord, nay, as they are at variance in eſſential particulars with thoſe to which they are neareſt related, the truth of them is rather invalidated than confirmed by analogy; hence the teſtimony of a ſingle obſerver, however experienced, and worthy to be credited, it is apprehended is inſufficient for procuring ſuch facts a general acceptance. But granting that the facts ſhould be generally admitted, without heſitation, to be true in the inſtances which have fallen under the notice of the writer of the above work, the more judicious part of the medical profeſſion will require the obſervations to be derived from much more extenſive and varied experience, in order to appreciate, juſtly, the value of the practical concluſions. Hence there appears but little likelihood of improvements in practice being made, unleſs the ſubject be inveſtigated by many inquirers, and the attention of the public at large be kept excited. I do not think that it is neceſſary for me to explain the various modes, and point out the ſituations in which inquiries may be proſecuted. Theſe I ſuppoſe will, without difficulty, be underſtood by peruſing Dr. Jenner's treatiſe. I hope I ſhall not be conſidered as aſſuming too much in recommending, not only thoſe of the profeſſion of phyſic, but dairy farmers, and others who reſide in the country, to collect the facts on the ſubject, which have hitherto fallen under notice, only in a caſual way. From ſuch a procedure, it is reaſonable to calculate that the acquiſition of eſtabliſhed truths will be greatly accelerated, or error will be exploded.

---

* An Inquiry into the cauſes and effects of the *Variolæ vaccinæ*, &c. or the Cow Pox, by Edward Jenner, M. D. F. R. S. &c. 4to. London, 1798.

Agreeably to the preceding repreſentation, I go forward to examine the evidence of the principal facts, aſſerted in the publication on the Cow Pox; and to ſtate what farther evidence I have derived from my own experience, and from the communications of a number of profeſſional gentlemen, of unſuſpected veracity, and undoubted accuracy.

Perhaps it may be right to declare, that I entertain not the moſt diſtant expectation of participating the ſmalleſt ſhare of honour, on the ſcore of diſcovery of facts. The honour on this account, by the juſteſt title, belongs excluſively to Dr. Jenner; and I would not pluck a ſprig of laurel from the wreath that decorates his brow.

This declaration I can prove to demonſtration*, is utterly ſuperfluous for this gentleman himſelf, but I am not confident that it is altogether without uſe, to exempt me from the ſuſpicions which certain members of the profeſſion (with whom I will have no fellowſhip) would be anxious to excite.

---

* On ſhewing to Dr. Jenner the original paper which I read, as a Lecture on the Cow Pox, and which furniſhes the principal materials of this diſſertation, he ſeemed only anxious that I ſhould not think it important enough for publication.

The firſt fact in order which I ſhall examine, may be ſtated in the following terms:

I. *Perſons who have undergone the* SPECIFIC FEVER *and* LOCAL DISEASE, *occaſioned by the Cow-Pox infection, communicated in the accidental way, (who had not undergone the Small Pox,) are thereby rendered unſuſceptible of the Small Pox.*

To eſtabliſh this important fact, *Dr. Jenner* has related (p. 9 to 26) about twenty inſtances of inoculation of the Small Pox, of perſons who were known to have gone through the Cow Pox, but not one of them took the Small Pox in this way; nor by aſſociating, afterwards, with patients labouring under this diſeaſe. The permanency of the inexcitability of the conſtitution to the Small Pox, was manifeſted by ſome of the inſtances being perſons who had been affected with the Cow Pox twenty, thirty, forty, and even fifty-three years before. It muſt not be ſuppoſed that the fact is ſupported by merely theſe twenty inſtances; which were ſelected for illuſtration; for Dr. Jenner having reſided in Glouceſterſhire twenty years, in which county the Cow Pox is frequently epizootic, ſeveral hundred inſtances muſt have fallen under his own obſervation, or that of his acquaintance, of perſons not taking the Small Pox, who had gone through the Cow Pox. Dr. Jenner appears to have been occupied for a long time in aſcertaining this fact. And to prove that he has an extraordinary claim to credit on that account, I will mention the following occurrence. When I was in company with the late Mr. John Hunter, about nine years ago, I heard him communicate the information he had received from Dr. Jenner, that in Glouceſterſhire an infectious diſorder frequently prevailed among the Milch Cows, named the Cow Pox, in which there was an eruption on their teats—that thoſe who milked ſuch Cows were liable to be affected with puſtulous eruptions on their hands, which were alſo called the Cow Pox,—that ſuch perſons as had undergone this diſeaſe, could not be infected by the variolous poiſon,—and that as no patient had been known to die of the Cow Pox, the practice of inoculation of the poiſon of this diſeaſe, to ſuperſede the Small Pox, might be found, on experience, to be a great improvement in phyſic.

I noted theſe obſervations, and conſtantly related them, when on the ſubject of the Small Pox, in every courſe of lectures which I have given ſince that time.

This fact has been mentioned in two publications: namely, by Mr. Adams,* in his book on Morbid Poiſons, &c. in 1795; and by Dr. Woodville, in his Hiſtory of Inoculation, in 1796†.

On converſing with *Sir George Baker*, Bart. concerning the Cow Pox, rendering people unſuſceptible of the variolous diſeaſe, Sir George

---

[*] "The Cow Pox is a diſeaſe well known to the dairy farmers in Glouceſterſhire—' What is extraordinary, as far as facts have hitherto been aſcertained, the perſon who has been infected is rendered inſenſible to the variolous poiſon."——Adams on Morbid Poiſons, 8vo. 1795, p. 156.

[†] " It has been conjectured that the Small Pox might have been derived from ſome diſeaſe of brute animals: and if it be true that the mange, affecting dogs, can communicate a ſpecies of itch to man: or, that a perſon, having received a certain diſorder from handling the teats of Cows, is thereby rendered inſenſible to variolous infection ever afterwards, as ſome have aſſerted; then indeed the conjecture is not improbable.—Woodville, p. 7.

obſerved, he had been informed of the fact, in ſome papers, on the Cow Pox, communicated to him many years ago; but that as the ſtatement did not then obtain credit, it was not publiſhed. After a fruitleſs ſearch for theſe papers, Sir George, whoſe zeal for the improvement of Phyſic did not forſake him on this occaſion, authorized me to write to his relative, the *Rev. Herman Drewe*, of Abbotts. From this gentleman, who had availed himſelf of great opportunities of inquiring into the nature of the Cow Pox, when he reſided in Dorſetſhire, I immediately received anſwers in a very polite letter, to all the queries which I took the liberty of propoſing. With regard to the fact under examination, the information received from this gentleman is in theſe terms: "Mr. Bragge,* who inoculated my pariſh, rejoiced at having an opportunity of aſcertaining the fact. Three women had had the Cow Pox, he therefore charged them with a ſuperabundance of matter, but to no purpoſe; all his other patients, more than 50, took the infection, but the three women were not in the leaſt diſordered, even though they aſſociated conſtantly with thoſe who were infected. Thirteen ſimilar inſtances I at that time, in that neighbourhood, aſcertained." Mr. Drewe obſerves, that the diſorder "is epizootic in Devonſhire, Dorſetſhire, and Somerſetſhire, and there is no doubt that it is to be met with elſewhere, under the name of Cow Pox, or ſome other denomination. When I made inquiries about the Cow Pox, I reſided in Dorſetſhire, and gained all my information from a Mr. Downe, Surgeon, of Bridport, a Mr. Bragge, Surgeon, of Axminſter, and a Mr. Barnes, of Colyton (ſince dead). I have not thought of the matter ſince, and as my letters on the ſubject have eſcaped Sir George Baker's ſearch, ſo many particulars have my recollection."

---

* Mr. Drewe's Letter, Abbotts, July 5th, 1798.

Dr. Pulteney * *of Blandford*, who did me the honour to anſwer the queſtions which I troubled him with, informs me "that the diſeaſe is well known in Hampſhire, Dorſetſhire, Somerſetſhire, and Devonſhire. That it is not uncommon in Leiceſterſhire, and other midland counties: but dairy-men keep it a ſecret as much as poſſible, as it is diſreputable to the cleanlineſs of the produce.—An intelligent and reſpectable Inoculator in this country, informed me, that of ſeveral hundreds whom he had inoculated for the Small Pox, who had previouſly had the Cow Pox, very few took the infection; and ſuch as did, he had great room to believe were themſelves deceived, in regard to their having had the Cow Pox."

---

* Dr. Pulteney's Letter, Blandford, July 14, 1798.

I am deeply indebted for ſeveral letters on the ſubject, to the *Rev. Hen. Jerome de Salis*, D. D.[*]. "I have heard," ſays he, "a good deal of the Cow Pox in this country. I have given a copy of your queſtions to Mr. Heurtley, and another to Sir William Lee, and I dare ſay, after a time this country will produce much information relative to the Cow Pox. I have found that in this pariſh, (Wing) this diſorder raged in one farm, but did not get beyond it, three years ago. A man who now works with me, was employed with three others in milking the Cows. None but himſelf had had the Small Pox, all three had the Cow Pox, but he quite eſcaped it. One of theſe three is now in the pariſh, and I will have him inoculated for the Small Pox. He was much ſtruck with the reſemblance of the ſymptoms to thoſe he had lately experienced in the Small Pox. Mr. Thomas Rhodes, a reſpectable farmer and dairy-man at Abbots-Aſton, (a pariſh adjoining

---

[†] Dr. de Salis' Letters, Wing, Bucks. July 20th, 25th, and 29th, 1798.

to this) had the Cow Pox when he was a boy, and was afterwards inoculated for the Small Pox, without effect. As this is a caſe quite in point, and as I know the man perfectly well, and alſo know the inoculator, I will have all the particulars drawn up in the manner you may direct, and authenticated in the courſe of a few days. I have the name of a ſervant of his father's, who had the Cow Pox at the ſame time that he had it. This man lives in the adjoining pariſh of Soulbury, and if he has not had the Small Pox ſince, I will have him inoculated after harveſt."

In the dairy farm above mentioned, in which the Cow Pox raged three years ago, it had not appeared for the preceding fourteen or fifteen years. Two men were then infected, one of whom lives now at Ayleſbury, and the other at Buſhy. For reaſons which I will hereafter give you, I ſhall inquire after the man at Ayleſbury."

From *Mr. Downe,* Surgeon of Bridport*, I have received ſome important information.

" The Cow Pox is a diſorder in Devonſhire as well as Dorſetſhire, but it ſo rarely occurs, that the ſources of information are very ſcanty. A few years ago, when I inoculated a great number for the Small Pox, I remarked that I could not, by any means, infect one or two of them, and on inquiry, I was informed they had previouſly been infected with the Cow Pox. Some few families who had been infected with the Cow Pox, were repeatedly inoculated with the matter of the Small Pox, and without effect. I know that a medical man in this part of the country was injured in his practice, by a prejudice raiſed unjuſtly, that he intended to ſubſtitute the Cow Pox for the Small Pox. So great an enemy to improvement are the prejudices of the public in the country, that I think experiments of importance can only be made in hoſpitals.

---

* Mr. Downe's Letter, Bridport, Auguſt 1, 1798.

" A farmer's * wife in this neighbourhood, her daughter, and two ſons, were all employed in milking the Cows when this diſorder prevailed among them. The mother had gone through the Small Pox in the natural way, but the others had never had the Small Pox. The latter, viz. the two ſons and daughter, were infected from the Cows, and the mother continued to milk them the whole time, without the leaſt inconvenience. The daughter and two ſons had a ſlight fever, and afterwards eruptions on the hands, by which they were much re-

---

* Mr. Downe's Second Letter, Bridport, Aug. 25, 1798.

lieved of their fever. I had this account from one of the parties infected, and it may be depended upon.

About three years ſince I inoculated between ſix and ſeven hundred, and I recollect one or two of the number who could not be infected. On inquiry I found they had previouſly had the Cow Pox."

The *Rev. John Smith of Wendover*, to whom I owe many thanks for very willingly, at my requeſt, taking upon himſelf the trouble of making inquiries in his neighbourhood, informs me* " that the high land of his pariſh does not admit of dairying upon it, and the dairy farmers here know nothing of the Cow Pox. But Mr. Henderſon, the Surgeon in the pariſh, whoſe practice takes him a little into the vale, tells me, that he has met with the diſeaſe, and that a few years ago he three times endeavoured to inoculate a lad, who had been uſed to milking, but could only excite inflammation upon the arm, without any puſtulous appearance. And upon inquiry, he found the lad had previouſly been affected with the Cow Pox. Mr. Woodman, a Surgeon at Ayleſbury, had met with the diſeaſe among the Cow boys in the vale. Mr. Grey, a Surgeon of Buckingham, ſays the diſorder is common among the milkers in his neighbourhood. He had not been led to conſider, particularly, the effects of the diſeaſe, but he remembers one boy poſſeſſed of the idea, that he could not take the Small Pox by inoculation, becauſe he had had the Cow Pox, and that he could only excite redneſs upon the boy's arm. He thinks he recollects caſes of boys having had the Small Pox, after having had the Cow Pox. The diſeaſe is not very notorious, for I paſſed ſome days laſt week with two intelligent farmers, one of them had kept 70 milch Cows for many years paſt, but knew nothing of the Cow Pox among his ſervants. The other knew as little."

---

* Mr. Smith's Letter, Vicarage, Wendover, Aug. 5, 1798.

Mr. Giffard,[*] *Surgeon of Gillingham, near Shaftſbury*, has been ſo good as to write to me on the ſubject of the Cow Pox; he informs me "That it is a diſeaſe more known in Dorſetſhire than in moſt other counties." "I laſt winter," ſays he, "inoculated three pariſhes, and ſome of the ſubjects told me they had had the Cow Pox, and that they ſhould not take the Small Pox, but I deſired to inoculate them. I did ſo two or three times, but without effect."

---

[*] Mr. Giffard's Letter, Gillingham, Aug. 9, 1798.

—"Perſons never take the Small Pox after they have had the Cow Pox."

On Thurſday, June 14th laſt, happening, with Mr. Lucas, Apothecary, to be on profeſſional buſineſs at Mr. Willan's farm, adjoining to the New Road, Marybone; which farm is appropriated entirely for the ſupport of from 800 to 1000 milch Cows; I availed myſelf of that opportunity to make inquiry concerning the Cow Pox. I was told it was a pretty frequent diſeaſe among the Cows of that farm, eſpecially in winter. That it was ſuppoſed to ariſe from ſudden change from poor to rich food. It was alſo well known to the ſervants, ſome of whom had been affected with that malady, from milking the diſeaſed Cows. On inquiry, I found three of the men ſervants, namely, Thomas Edinburgh, Thomas Grimſhaw, and John Clarke, had been affected with the Cow Pox, but not with the Small Pox. I induced them to be inoculated for the Small Pox: and, with the view of aſcertaining the efficacy of the variolous infection employed, William Kent and Thomas Eaſt, neither of whom had had either the Cow Pox or the Small Pox, were alſo inoculated.

Three of theſe men, viz. Edinburgh, Eaſt, and Kent, were inoculated in each arm with perhaps a larger inciſion, and more matter, than uſual, on

Sunday, June 17th, by Mr. Lucas; and Dr. Woodville and myſelf were preſent. The matter was taken from a boy preſent, who had been inoculated 14 days before this time, and who was obligingly provided by Dr. Woodville.

CASE I.

Thomas Edinburgh, aged 26 years, had lived at the farm the laſt ſeven years. Had never had the Small Pox, nor Chicken Pox, nor any eruption reſembling that of theſe diſeaſes, but the Cow Pox, which he was certainly affected with ſix years ago. He was ſo lame from the eruption on the palm of the hands as to leave his employ, in order to be for ſome time in a public hoſpital; and he teſtified that his fellow-ſervant, Grimſhaw, was at the ſame time ill with the ſame diſorder. A cicatrix was ſeen on the palm of the hands, but none on any other part. He ſaid that for three days in the diſeaſe, he ſuffered from pain in the axillæ, which were ſwollen and ſore to the touch. According to the patient's deſcription, the diſeaſe was uncommonly painful and of long continuance; whether on account of the unuſual thickneſs of the ſkin, which was perceived by the lancet in inoculation, future obſervations may determine.

THIRD DAY.—*Tueſday, 19th June.*

A ſlight elevation appeared on the parts inoculated. No diſorder was perceived of the conſtitution, nor complaint made.

FIFTH DAY.—*Thurſday, 21ſt.*

The appearance on the part inoculated, of the left arm, was like that of a gnat bite, and Mr. Wackſel, Apothecary to the Small-Pox Hoſpital, obſerved that the inflammation ſeemed too rapid for that of the variolous infection, when it produces the Small Pox. On the other arm there had been a little ſcab, which was rubbed off, leaving only a juſt viſible red mark. No complaint was made.

EIGHTH DAY.—*Sunday, 24th.*

The inflammation on the left arm had ſubſided, and there was in place of it, a little ſcab. The right arm as before. Has remained quite well.

Sent the patient with Mr. Wackſel to the Small-Pox Hoſpital, where he was inoculated a ſecond time, with matter from a perſon preſent, who then laboured under the Small Pox,

FOURTH DAY *after Second Inoculation, Wedneſday, 27th.*

A little inflammation appeared on the part inoculated of one arm, but none of that of the other. Except ſome ſlight pains and head ach on Monday laſt, had remained quite well.

EIGHTH DAY *after Second Inoculation, Sunday, July 1ſt.*

A little dry ſcab was upon each part inoculated. No ſymptoms of diſorder had appeared.

CASE II.

Thomas Grimſhaw, aged about 30 years. Had lived in town, at the farm only 7 weeks, but ſix years ago alſo lived at this place, when he was affected with the Cowpox; and he teſtified that his fellow-ſervant, Edinburgh, was at the ſame time ill of the ſame diſeaſe. Grimſhaw ſaid he had pains and ſoreneſs on touching the axillæ during that illneſs, but he got much ſooner well than Edinburgh.

On Tueſday, the 19th June, Grimſhaw was inoculated in both arms, at the Smallpox Hoſpital, from a patient then ill of the Smallpox.

THIRD DAY.—*Thurſday 21ſt.*

A little inflammation and fluid appeared under a lens in the parts inoculated, as if the infection had taken effect. Remained quite well.

SIXTH DAY.—*Sunday 24th.*

Inflammation which had ſpread near the parts inoculated has diſappeared; and now nothing was ſeen but a dry ſcab on them. Had not been at all diſordered. He was inoculated this day a ſecond time, as before, at the Smallpox Hoſpital.

FOURTH DAY.—*Second Inoculation, Wedneſday, June 27th.*

Not the leaſt inflammation from the laſt inoculation, nor any complaint.

EIGHTH DAY.—*Second Inoculation, Sunday, July 1ſt.*

Not the ſmalleſt inflammation from the inoculation. Had remained quite well.

CASE III.

John Clarke, 26 years of age, had the Cowpox ten years ago at Abingdon, where he was under the care of a medical practitioner of that place. He was inoculated by Mr. Wackſel, at the Smallpox Hoſpital, on Tueſday, June 19th, from a patient affected with the Smallpox.

THIRD DAY.—*Thurſday, June 21ſt.*

There was inflammation, and a fluid in the parts inoculated; but theſe appearances were judged to be premature, with reſpect to the Smallpox.

SIXTH DAY.—*Sunday, June 24th.*

The appearances of inflammation and fluid in the right arm, were ſuch as to make it doubtful, whether or not the variolous infection had taken effect; but there were no ſuch appearances on the left arm, the inflammation being gone.

He was this day inoculated a ſecond time at the Smallpox Hoſpital, from a patient.

EIGHTH DAY *after Second Inoculation, Sunday, July 1ſt.*

No effect but inflammation, and afterwards feſtering, from the ſecond inoculation.

The inflammation on the right arm, from the firſt inoculation, went off in a day or two after the laſt report. He had remained quite well in all reſpects.

CASE IV.

William Kent, 30 years of age, had lived at Mr. Willan's farm about 8 weeks. Had never laboured under the Smallpox, but ſaid he had gone through the Chickenpox; and he had been told that he had been affected with a diſorder, which was ſuppoſed to be the Cowpox, when he was 4 years of age. He was inoculated under the ſame circumſtances as Thomas Edinburgh, by Mr. Lucas, on Sunday, June 17th.

THIRD DAY.—*Tueſday 19th.*

The parts inoculated were ſcarcely red, yet their appearance was ſuch, when viewed under a lens, as to render it probable the Smallpox would take place. Remained quite well.

FIFTH DAY.—*Thurſday 21ſt.*

The inoculated part of the left arm appeared red; and on viewing it with the magnifier, a little bladder was ſeen in the middle. The ſame was the ſtate of the right arm, but leſs evidently. Continued free from illneſs. Pulſe 94 after walking two miles in a very hot day.

EIGHTH DAY.—*Sunday 24th.*

The left arm was more inflamed, and a ſmall flat veſication appeared in the middle of the inflamed part. The right arm was affected in the ſame manner, but in a leſs degree. It was not doubted that he was infected with the variolous diſeaſe, eſpecially as he complained of ſoreneſs of the arm-pits, and he had been very much diſordered the two laſt nights, having had pain of his bones in general, and head ach, and had felt very hot, but not chilly. Pulſe was only 80, and his tongue had the healthy appearance, nor was he thirſty.

ELEVENTH DAY.—*Wedneſday 27th.*

Variolous eruptions in number, perhaps 20 or 30 had made their appearance.

FIFTEENTH DAY.—*Sunday, July 1ſt.*

Eruptions are in a ſuppurated ſtate. Had been quite well, and he has continued his employ during the preſent hot week.

CASE V.

Thomas Eaſt, aged 21 years, he believed he had never been affected with the Smallpox, and certainly not with the Cowpox. There were ſeveral cicatrices, however, on his arms, exactly like thoſe from the Smallpox, and if the inoculation had not ſucceeded, I ſhould have been diſpoſed to conclude that he had already gone through that diſeaſe.

He was inoculated by Mr. Lucas on Sunday, 17th June, at the ſame time, and under the ſame circumſtances, as Thomas Edinburgh and William Kent.

THIRD DAY.—*Tueſday 19th June.*

Only a juſt viſible ſcab on the parts inoculated, and it was thought the infection had not taken effect. Remained well.

Went to the Smallpox Hoſpital, and was inoculated a ſecond time.

FIFTH DAY.—*Thurſday 21ſt June.*

Redneſs appears now in the parts inoculated, as if both the firſt and ſecond inoculation had taken effect.

EIGHTH DAY.—*Sunday 24th June.*

All the four parts inoculated were ſo much inflamed, that it ſeemed now doubtful, whether the Smallpox would come on. Parts firſt inoculated, leſs inflamed than thoſe of the ſecond inoculation; and the right arm more inflamed than the left. Pains of the axillæ were complained of, which were a little ſwelled, and ſore to the touch. There were no ſymptoms of fever.

ELEVENTH DAY.—*Wedneſday 27th June.*

About a dozen variolous eruptions were now out. No complaints were made.

FIFTEENTH DAY.—*Sunday, July 1ſt.*

Variolous eruptions were in a ſtate of ſuppuration. There was a ſuppuration of the parts inoculated pretty much alike, from both the firſt and ſecond inoculation.

It was thought the ſecond inoculation had excited inflammation in the parts firſt inoculated, which otherwiſe might not have taken place ſo ſoon, or not at all.

Notwithſtanding the hot weather for the laſt fortnight, the temperature being generally 68° to 78° of Fahrenheit's thermometer, the patients who took the Smallpox were ſo little diſordered, that they continued their daily work.

No treatment was preſcribed previouſly to inoculation, all the men being in health; but every other day after it, for a fortnight, they were purged with ſalts, and directed to abſtain from ſtrong liquors, and to eat very little animal food.

I did not require any farther evidence than what I have already procured, in my own practice, to ſatisfy me, that the quantity of variolous matter does not influence the diſeaſe; but on account of ſome late aſſertions, that the diſorder is rendered milder by uſing a ſmaller quantity of matter in the above caſes, a larger quantity was purpoſely inſerted; yet milder caſes than the above could not be deſired.

It ſhould alſo be noticed, that the three patients above mentioned, who did not take the infection on inoculation for the Smallpox, had their children ſoon aftewards inoculated, who all took the Smallpox. Theſe men lived in the ſame apartments with their children during the illneſs of the Smallpox; but not one of them was infected.

We have ſeen in the above caſes, five perſons inoculated for the Smallpox, under the moſt favourable circumſtances for the efficacioufneſs of the infection; two of them took the diſeaſe from once inſerting variolous matter, but the other three were uninfected, although the matter was twice inſerted; and although they were expoſed to infection, by living with their children while they were ſuffering under the Smallpox.

The three patients who did not take the Smallpox, gave ſtrong circumſtantial evidence that they had been affected with the Cowpox, but not with the Smallpox. The other two patients, who were infected with the Smallpox, there is no reaſon to doubt were as credible perſons as the former, and they atteſted that they had not had the Smallpox; which atteſtation being verified by their taking the diſeaſe, it would be injuſtice to queſtion the other part of their evidence, that they had not laboured under the Cowpox. For, as to the mere traditionary ſtory of William Kent having the Cowpox, no circumſtance ſupported the truth of it againſt the extreme improbability of a boy of 4 years of age, or under, ſuffering a diſeaſe which is contracted by handling the teats of Cows in milking, when they are ſo difficult to manage, that male, inſtead of female ſervants, muſt then, generally, be employed. In ſome places, it ſeems the eruptive diſeaſe, which is known to medical men by the name of the Chicken, or Swinepox, is called by the lower orders of people, Cowpox. Mr. Giffard takes notice that "there are two kinds of Cowpox," the one is attended with eruptions on the ſkin in general, and ſometimes produces pits; but the other is a diſeaſe confined to the hands. It is moſt probable that Kent's eruptive diſeaſe, when a child, was the Chickenpox, if he really had an eruptive diſeaſe. One of three reaſons may be aſſigned for the above three patients not taking the Smallpox: viz. 1. That they had already ſuffered the Smallpox. 2. That they had not had this diſeaſe, and that their conſtitutions were not excitable at the time they were inoculated: for one can ſcarce ſuſpect the failure to be from the mode of inſerting the matter. 3. That they were not capable of infection with the Smallpox poiſon, becauſe they had undergone the Cowpox. In reſpect of the firſt aſſignable reaſon, it muſt be allowed that a perſon may go through the Smallpox, and the diſeaſe be ſo ſlight, that it is neither noticed by the patient, nor by his friends. But ſuch unobſerved caſes are extremely rare, and they bear ſo very ſmall a proportion to the others, that for three ſuch caſes to occur together on the preſent occaſion, ſeems to be barely a poſſibility.

With regard to the ſecond aſſigned reaſon, probably about one out of 50 perſons does not take the Smallpox by inoculation of the ſame matter, and in the ſame manner; and perhaps not more than one out of 50 of thoſe who are not infected by a firſt inoculation, fail to be infected on a ſecond inoculation. According to this repreſentation, then it appears to be a mere poſſibility that the Smallpox poiſon ſhould not take effect, for the ſecond aſſignable reaſon, namely, a peculiar diſpoſition; eſpecially as the patients were ſubſequently under very favourable circumſtances, for being infected with variolous effluvia.

With regard to the third aſſignable reaſon, as in ſo many inſtances now recorded, it appears that perſons, who have undergone the Cowpox, are not ſuſceptible of the Smallpox; and as the failure of the inoculation cannot be imputed with juſtice to the two other cauſes above mentioned, it ſeems moſt reaſonable to impute the inefficacy of the variolous poiſon in the above three inſtances to a ſtate of inexcitability, produced by the Cowpox poiſon.

On making inquiries at *Mr. Kendal*'s farm, for Milch Cows, on the New Road, Marybone, a female ſervant informed me that ſhe laboured under the Cowpox many years ago, when ſhe lived in Suffolk, where this diſeaſe prevails. From her deſcription I could not doubt that ſhe had really been affected with the Cowpox. After this ſhe took, what ſhe believed to be the Smallpox, from an infant, which was nouriſhed by her breaſts. A fever preceded the eruptions, which were only about 50 in number, and they diſappeared in a few days after they came out. If the latter part of this teſtimony is accurate, one cannot admit this caſe to be an example of the Smallpox, taking place in a conſtitution which had previouſly been affected with the Cowpox.

At this farm, a Cow was ſhewn to me which was ſaid to be affected with the Cowpox: on examination, the diſorder appeared to be in its laſt ſtage of deſiccation. However, eight perſons, who had not undergone the Smallpox, were inoculated with the ſcabs of this diſorder, but no diſeaſe enſued.

On calling at Mr. *Rhodes*' milk farm on the

Hampſtead Road, where there is a very large ſtock of Cows, I found the Cowpox had not fallen under his obſervation; but two of the male ſervants were well acquainted with ſome parts of its hiſtory. It appeared alſo on inquiry, that one of the Cows had really laboured under the diſeaſe two months before, namely, in May laſt, but the milker was not infected, becauſe he ſaid there were no cuts on his hands, or abraſion of the cuticle. It was deſcribed very clearly to be a different diſeaſe from the common inflammations and eruptions which produce ſcabbed nipples. One of the male ſervants had often ſeen the diſeaſe in Wiltſhire and Glouceſterſhire. The milkers, he ſaid, were ſometimes ſo ill, as to lie in bed for ſeveral days, and there was a fever at the beginning, as in the Smallpox, but that no one ever died of it. He had known many perſons who had laboured under the Cowpox, but who had never ſuffered the Smallpox, although it prevailed in their own families; except in one inſtance in which he was told that the perſon who took the Smallpox, had gone through the Cowpox when a child. The ſame ſervant ſaid it was a common opinion, that people who have been affected with the Cowpox, to uſe his own words, are "hard to take the Smallpox."

Mr. Francis, who keeps a farm for Milch Cows on the road to Somers' Town, had ſeen the diſeaſe ſeveral times in the autumn among his cattle, and he knew that it was very apt to produce painful ſores on the hands of the milkers; but he had never heard, or obſerved, that it prevented perſons from having the Smallpox. He ſaid that three years ago, in the ſpring, the diſeaſe prevailed at ſeveral farms on the New Road.

A male ſervant of Mr. Francis, who has a good underſtanding, and is a man of veracity, and had lived in dairy farms all his life, ſtated, " that he had ſeen the Cowpox 35 years ago at King's Wood, in Somerſetſhire, and frequently there, and in London ſince that time. The diſeaſe, he ſaid, was then vulgarly called the Cowpox; it appeared on their teats and udders with fiery or flame like eruptions—was very infectious among the Cows and the milkers; but never knew either human creature, or beaſt die of it. It affects the hands and arms of the milkers with painful ſores, as large as a ſixpence, which laſt for a month or more, ſo as to diſable the ſufferers from continuing their employment. The diſeaſe breaks out eſpecially in the ſpring, but occaſionally at other times of the year. Moſt of the Cows in his maſter's, Mr. Francis' farm, were infected three years ago in the ſpring, at which times many of the milkers were alſo infected. A new Cow is very liable to take the diſeaſe.—He had always underſtood that a perſon who had had the Cowpox, could not take the Smallpox, and never knew in the courſe of his life an inſtance of the Smallpox in ſuch perſons.

The following inſtances fell under his own obſervation: a fellow male and a female ſervant were affected with the Cowpox; ſome time after this, the pariſh in which they lived were in general inoculated for the Smallpox, but theſe two perſons, who had never laboured under the Smallpox, could not be infected with this diſeaſe; nor did they take it, although they ſubſequently lived with their children while they were ſuffering the Smallpox. He alſo believed, and it was a common opinion in many parts of the country, that perſons who have undergone the Smallpox cannot take the Cowpox. He himſelf laboured under the inoculated Smallpox when 17 years of age, but never took the Cowpox, although he had milked a great number of Cows labouring under the diſeaſe, and by which other milkers were infected. He had never known either a human creature, or Cow have the diſeaſe more than once. He had the Meaſles previouſly to the Smallpox, as well as the Hooping Cough.

At ſome other farms, near London, where Milch Cows are kept, I found the diſorder was not known either to the maſters, or ſervants.

Dr. Haygarth very kindly wrote me a letter from Bath, on the 30th of Auguſt laſt, in which he ſays, " To none of your queſtions, concerning the Cowpox, can I give any anſwer from my own knowledge. Of ſuch a diſtemper, I never heard among the Cheſhire, or Welſh farmers. My firſt intelligence upon this ſubject came from my friend, Dr. Worthington, of Roſs, ſome time ago. He, as well as another friend, Dr. Percival, ſpeak very favourably of Dr. Jenner, on whoſe teſtimony the extraordinary facts he has publiſhed at preſent principally depend."

I feel moſt ſenſibly the great favour ſhewn to me by *Profeſſor Wall*, of Oxford. Although this gentleman's zeal and ability in promoting uſeful inquiries are acknowledged, I cannot but attribute the great pains which he beſtowed to procure anſwers to my queries in ſo ſhort a time as I required, in part, to the friendſhip founded in the days of academical ſtudies: to uſe this amiable gentleman's own words —" thoſe days of free, manly, and liberal converſation which I reflect on with infinite pleaſure.

The information belonging to this place, from Profeſſor Wall,* is the anſwer to the queſtion, whether there is ſufficient evidence that the Smallpox cannot infect a perſon who has once had the Cowpox, attended with fever; and if there has been a local affection without fever, is ſuch perſon ſtill capable of taking the Smallpox?

" I receive but one anſwer to the two different modes of the queſtion, which is, that any perſon who has ever had the Cowpox, has never been known to have the Smallpox.

A ſervant who has kept the Cows of a conſiderable dairy-farm in this neighbourhood a great many years, told me that he had the Cowpox early in life. Yet about 6 or 7 years ago he wiſhed, for ſecurity, to be inoculated for the Smallpox—the operation was performed three ſeveral times, but no diſorder nor eruption enſued—The Surgeon, a gentleman of great eminence in this place, aſked him if he had ever had the Cowpox; upon his anſwering yes, the Surgeon replied, Then it is uſeleſs to make any farther trial.—This ſervant, the next year, had ſeveral children inoculated by Sutton. He was with them all the time till their recovery, but did not receive the infection. A ſervant-girl at another conſiderable farm, told me ſhe had the Cowpox early in life; ſeveral years after ſhe was inoculated, but nothing took place, except the appearance of red bluſh round the inciſion, ſimilar, I ſuppoſe, to what Dr. Jenner mentions.

---

* See Dr. Wall's Letter, Oxford, Sept. 3, 1798.

This red ſuffuſion has been haſtily, by ſome inoculators, regarded as a proof, that the ſyſtem has been infected with the virus of the Smallpox; but neither this appearance, nor even a much more conſiderable affection of the arm is always ſufficient ſecurity againſt future infection, unleſs there has been ſome eruption—See *Memoirs of the Medical Society.*"

From *Mr. Dolling*, an Inoculator at *Blandford*, I have received important intelligence, for which I am under further obligations to the Rev. Herman Drewe*. "Mr. Dolling has inoculated for the Smallpox a great number of perſons, who ſaid they had been affected with the Cowpox, and very few of them took the infection, to produce the Smallpox, and he is of opinion that thoſe who took the Smallpox, were miſtaken in ſuppoſing they had really laboured under the Cowpox. In one family five out of ſeven children took the Cowpox, by handling the teats of a Cow affected with the Cowpox; theſe ſeven children were inoculated for the Smallpox, but none took the infection, except the two who had not laboured under the Cowpox.

---

* The Rev. H. Drewe's Second Letter, Sept. 7th, 1798.

Dr. Croft tells me, that in *Staffordſhire*, to his knowledge, the fact has been long known, of the Cowpox, which prevails in that county, affording an exemption of the human ſubject from the Smallpox. This gentleman affords me an unequivocal proof of his conviction of the ſafety and efficacy of the inoculated Cowpox, by his application to me for matter, in order to inoculate one of his own children.

My honourable friend, *Mr. Edward Howard*, has been aſſured, on very good authority, that of a relation, who is an officer in the Oxfordſhire Militia, that it is a received opinion among the ſoldiers, that it is unneceſſary to be inoculated for the Smallpox, if they have already laboured under the Cowpox, as many of them have done.

Dr. Redfearn of *Lynn** informs me, that "the Cowpox is a common diſeaſe among the cattle in this part, and the farmers have made uſe of the appellation Cowpox for near thirty years, although totally ignorant of the diſeaſe exiſting in the Weſt of England." But

---

* Dr. Redfearn's Letter, Lynn, Sept. 15th, 1798.

Dr. Alderſon, of *Norwich*[*] acquaints me, that there is reaſon to believe the diſeaſe is not known in his neighbourhood.

My correſpondents in the North and Eaſt Ridings of Yorkſhire, in Durham, in Lincolnſhire, and in the neighbourhood of Windſor, acquaint me that the Cowpox is not known in thoſe parts. But from the ſucceſs which I have had in diſcovering the diſeaſe, by making a ſtrict enquiry in farms, where it was believed not to exiſt; I can ſcarce doubt that it breaks out occaſionally in every part, where a number of Cows are kept, and that the infection is widely diſſeminated.

I do not find that the Cowpox is known in Lancaſhire. *Dr. Currie*,[†] of *Liverpool*, obligingly anſwers my letter; he ſays, "I have made inquiries among the farmers, but I have not been able to find one who is acquainted with the diſeaſe. Of courſe I cannot anſwer any of your queries. My friend, Dr. Percival, of Mancheſter, who is now here, never heard of the Cowpox in this county, any more than myſelf."

---

[*] Dr. Alderſon's Letter, Norwich, Sept. 16, 1798.

[†] Dr. Currie's Letter, Liverpool, Sept. 8, 1798.

II. *Perſons who have been affected with the Specific Fever, and peculiar local Diſeaſe, by* INOCULATION OF THE COWPOX INFECTION, *who had not previouſly undergone the Smallpox; are thereby rendered unſuſceptible of the Smallpox.*

The firſt ſet of evidences of this fact are thoſe of Dr. *Jenner*, in the caſes XVII, XIX, XX, XXI, XXII, XXIII. They are inſtances of inoculation of the Cowpox, as in the Smallpox, with matter taken from the teats of Cows. A fever like that of the Smallpox aroſe in 6 to 9 days after the inciſion, but ſcarce of more than 24 hours duration; attended with an inflammatory appearance, or erythematous effloreſcence around the parts inoculated, and puſtulous ſores of thoſe parts; which do not ſuppurate, but remain limpid till they diſappear: and there is no eruption of other parts of the ſkin, as in the Smallpox.

In the caſes of inoculation under Dr. Jenner, the local affection was commonly as ſlight as in the inoculated Smallpox, but ſometimes there appeared a diſpoſition to a more extenſive inflammation of the ſkin around the parts in which the matter was inſerted. “ It ſeemed to ariſe from the ſtate of the puſtule, which ſpread out accompanied with ſome degree of pain, to about half the diameter of a ſixpence. By the application of mercurial ointment to the inflamed parts, (as is practiſed in the inoculated Smallpox) the complaint ſoon ſubſided.—To prevent inflammation of the ſkin, cauſtic was alſo applied to the veſicle of the inoculated part, to excite a different kind of inflammation : but the precaution was perhaps unneceſſary, as a third patient had nothing applied, and the arm ſcabbed quickly, without any eryſipelas.

One of theſe patients inoculated with the Cowpox was only ſix months old, and who took the diſeaſe. In none of the above caſes, after the Cowpox, could the Smallpox be excited, by repeated inoculation. The confidence of Dr. Jenner, in the ſafety and efficacy of the inoculation of the Cowpox is unequivocally declared by the inoculation of his own ſon, R. F. Jenner, aged 11 months; although the poiſon did not take effect in this inſtance. The project of inoculation of the Cowpox occurred, to other practitioners, antecedently to Dr. Jenner's experiments.

Mr. *Drewe*, in his letter above cited, ſpeaks of the practice. He ſays, "Mr. *Bragge* and I endeavoured to try the experiment of inoculating with the matter of the Cowpox, but from the ſcarceneſs of the diſeaſe, and unwillingneſs of patients, we were diſappointed."

Dr. *Pulteney* informs me, that "a very reſpectable practitioner acquainted him that of ſeven children whom he had inoculated for the Small pox, five had been previouſly *infected with the Cowpox purpoſely*, by being made to handle the teats and udders of infected Cows; in conſequence of which, they ſuffered the diſtemper. Theſe five, after inoculation for the Smallpox, did not ſicken; the other *two* took the diſtemper."

Farther, "A farmer in this country inoculated his wife and children with matter taken from the teat of a cow. At the end of a week the arms inflamed, and the patients were ſo far affected, as to alarm the farmer, although unneceſſarily, and incline him to call in medical aſſiſtance. They all ſoon got well, and were afterwards inoculated for the Smallpox, but no diſeaſe followed. I was not applied to in this caſe, but the fact is ſufficiently aſcertained."

Mr. *Downe* furniſhes me[*] with important information on the preſent fact. " R. F. near Bridport, when about 20 years of age, was at a farm houſe when the dairy was infected with the Cowpox. It being ſuggeſted to him that it would be the means of preſerving him from the Smallpox, which he had never taken, if he would ſubmit to be inoculated with the Cowpox ; he gave his conſent: he was infected in two or three places in his hand with a needle. He felt no inconvenience till about a week, when the parts began to inflame, and his hand to ſwell, his head to ach, and many other ſymptoms of fever came on. He was recommended to keep much in the open air, which he did, and in 4 or 5 days the ſymptoms of fever went off, as the maturation of the hand advanced. The parts ſoon healed, leaving permanent ſcars. He was afterwards inoculated twice by my grandfather, and a conſiderable time after twice by my father, but without any other effect than a ſlight irritation of the part, ſuch as is occaſioned in the arms of perſons who have already had the Smallpox. It was not expected at the time, that the Smallpox poiſon would be effectual, but it was inſerted, partly by way of experiment, and partly by way of precaution, the Smallpox being then in the family. The Smallpox has been repeatedly ſince in his own family, and he never avoided it, being confident that it was not poſſible to infect him with this diſeaſe. The next caſe, by Mr. Downe, although it affords defective evidence, is not uſeleſs. "I have lately converſed with a perſon who was in play, inoculated in the hand with the Cowpox matter. The wounds apparently healed for a time, and then inflamed. He had a ſwelling in the axilla, pain in the head, ſickneſs, and ſlight fever. No eruption took place, but there was much maturation at the place of inſertion, and conſiderable ſcars remain."

---

[*] See Mr. Downe's Letter of Auguſt 25, 1798.

Next hear what *Profeſſor Wall* ſays in his anſwer to the queſtion, "Whether the diſeaſe has been communicated by inoculation, and whether it has produced a milder or more ſevere diſeaſe than in the caſual way?"

"I have* not yet learnt that this diſorder has, in this part of the country, ever been propagated by inoculation deſignedly. It has been communicated to perſons who have had ſlight wounds from thorns, abraſions of the ſkin from other cauſes, perhaps more readily than in the common way; but it has not appeared that the character or ſeverity of the diſorder has been altered by this circumſtance."

---

* Profeſſor Wall's Letter, above cited.

Mr. *Dolling*,* of Blandford, communicates the following inſtances: "Mr. Juſtings of Axminſter inoculated his wife and children with matter taken from the teats of a Cow that had the Cowpox: in about a week after inoculation, their arms were very much inflamed, and the patients were ſo ill, that the medical aſſiſtance of Mr. Meach, of Cerne, was called for. The patients did well. They were afterwards inoculated for the Smallpox by Mr. Trobridge, without effect."

III. *The diſeaſe produced by inoculating with the matter of the Cowpox, does not differ from the diſeaſe produced by inoculation with the matter from the human animal; nor is any difference obſerved in the effects of the matter from the firſt human ſubject infected from the brute animal, or from the matter generated, ſucceſſively, in the ſecond, third, fourth, or fifth human creature, from its origin in the brute.*

This important fact, at preſent, is only ſupported by the inſtances related by Dr. *Jenner*, in the caſes XIX to XXIII, p. 37 to 44. Hence, according to theſe inſtances, the poiſon of the Cowpox has the ſame properties, as appears from its effects on the human conſtitution, whether it be generated by the Cow, or by the human animal; and theſe properties are the ſame, however remote from the origin of the poiſon in the Cow. But it has not been determined by inoculating the teats of Cows with the matter taken from the Cow, and with that taken from the human creature; that the properties of the poiſon from this latter ſource are the ſame with regard to the brute, as thoſe of the matter from the Cow with regard to the ſame animal.

---

* Mr. Drewe's Second Letter, above cited.

I apprehend that the Cowpox is the only example at preſent known, of a permanent ſpecific infectious diſeaſe in the human conſtitution, produced by matter from a different ſpecies of animal; but it has been often conjectured, that many of the infectious diſeaſes of the human ſpecies are derived from brutes.

IV. *A perſon having been affected with the Specific Fever, and Local Diſeaſe, produced by the Cowpox poiſon, is liable to be again affected as before by the ſame poiſon; and yet ſuch perſon is not ſuſceptible of the Smallpox.*

I find that moſt part of profeſſional men are extremely reluctant in yielding their aſſent to this fact. Some, indeed, reject it in the moſt unqualified terms. They are not averſe from admitting the evidence, that the Cowpox may affect the ſame conſtitution repeatedly; or even that a perſon having had this diſeaſe, is unſuſceptible of the Smallpox; but that the conſtitution having ſuffered the Cowpox, ſhould ſtill be ſuſceptible of this diſeaſe, and not be ſuſceptible of the Smallpox, is an aſſertion with regard to which they demur to acquieſce. The unfavourable reception of the evidence for this fact does not ſeem to ariſe ſo much from the obſervations in ſupport of it, being ſuſpected to be inaccurate, or ſufficiently full and complete, as from its appearing, as they ſay, abſurd and inconceivable. On enquiring why the fact appears in this light, we find it is becauſe there is no ſupport from any other analogous fact. There is, in reality, no analogous fact. We have facts which ſhew that a perſon having undergone certain diſeaſes, occaſioned by particular poiſons, in ſome inſtances is, and in others is not, again ſuſceptible of the ſame diſeaſe, by the ſame poiſon ; but the inſtance before us is the firſt which has been obſerved of the conſtitution being rendered inexcitable to a diſeaſe, from a given morbid poiſon, by having ſuffered a different diſeaſe from another different poiſon, and yet it remains ſuſceptible of this different diſeaſe by this given morbid poiſon. In the firſt inſtance of certain new facts, it is eaſy to conceive that there may be no analogous fact to the one diſcovered. When the Smallpox firſt broke out, on its being diſcovered that the ſame conſtitution could not undergo this diſeaſe a ſecond time, no analogous fact was, I think, then known; and on that account it probably was not admitted without much heſitation. But on a ſubſequent diſcovery that the ſame conſtitution could not be infected more than once with the meaſles, this, as well as the former fact, readily found acceptance. An evidence for a fact ought not to be rejected, becauſe it is incomprehenſible or inconſiſtent with what is already known; but on the preſent occaſion, if the ſubject be well conſidered, it does not ſeem to me to be difficult to conceive that a change may be effected in the human conſtitution, by a diſeaſe from a morbid poiſon, ſo as to render ſuch conſtitution unſuſceptible of a diſeaſe from a given different morbid poiſon, and yet ſuch conſtitution ſhall remain ſuſceptible of the former diſeaſe, from the former morbid poiſon. Hence, I apprehend, the only juſt ground of objection which may be taken, is that of the obſervations on the authority of which the fact is ſaid to be eſtabliſhed. Let us then ſtate the evidence.

Under Caſe IX. p. 21. Dr. Jenner relates the hiſtory of a perſon who was firſt affected with the Cowpox in the year 1780, a ſecond time in 1791, and a third time in 1794. "The diſeaſe was equally ſevere the ſecond and third time as it was the firſt," which is, in general, otherwiſe both in the brute and human kind. Inoculation of the variolous poiſon was twice inſtituted in this patient, but without producing diſeaſe, nor could the patient be infected by aſſociating with perſons labouring under the Smallpox.

Another patient (ſee Jenner, p. 51.) ſuffered the Cowpox in 1759; in 1797 he was inoculated with the variolous poiſon, but without exciting the diſeaſe. In 1798 the Cowpox again took place.

With reſpect to the information which I have gained by my inquiries, concerning this fact; ſome of my correſpondents obſerved, that the Cowpox occurred ſo ſeldom among the human kind, that they had no obſervations to determine, whether a perſon could undergo the diſeaſe more than once; the greater part of my correſpondents ventured to ſay, that it had never been ſeen more than once in the ſame perſon; but ſome teſtified that the Cowpox certainly does take place, repeatedly, in the ſame conſtitution.

Mr. Woodman, of *Ayleſbury*,* ſays, " the Cowpox does not ſuperſede itſelf on future occaſions, for that Cow-boys have it repeatedly."

It may be worth while to notice, that none of the gentlemen of whom I made inquiries, knew an inſtance of the diſeaſe attacking the ſame Cow more than once; and it was ſaid that it was the current opinion that this was a fact.

The evidence for this fact, to my apprehenſion, only proves, ſatisfactorily, that the *local affection* of the Cowpox may occur in the ſame perſon more than once; but whether the *peculiar fever* alſo occurs more than once in the ſame perſon, from the Cowpox poiſon, does not appear certain; and muſt be determined by future obſervations, to be made with a particular view to this point. Future obſervations muſt likewiſe determine, whether, in thoſe caſes, (if ſuch occur) in which a perſon, after having gone through the Cowpox, takes the Smallpox, the Cowpox was attended with a fever, or was merely a local affection. It ſeems pretty well aſcertained, that the variolous poiſon may produce the Smallpox only locally, or without any affection of the whole conſtitution; and in ſuch a caſe, the conſtitution is ſtill ſuſceptible of the Smallpox, and yet, in both caſes, viz. of the *local affection* only, and of the whole conſtitution, the matter of the eruptions is capable of infecting others, ſo as to produce the Smallpox, either locally only, or alſo in the whole conſtitution. Hence it ſeems probable, that ſimilar local and general effects may be produced by the Cowpox poiſon, and not only in the human kind, but in Cows. I acknowledge, however, that the Caſe, p. 51. in *Jenner's* book, militates againſt this ſuppoſition.

---

* See Mr. Smith's Letter, above cited.

V. *A perſon is ſuſceptible of the Cowpox, who has antecedently been affected with the Smallpox.*

Dr. *Jenner*, p. 15-19, gives ſome inſtances of perſons taking the Cowpox, who had certainly gone through the Smallpox. But he ſays, "it is a fact ſo well known among our dairy-farmers, that thoſe who have had the Smallpox, either eſcape the Cowpox, or are diſpoſed to have it ſlightly; that as ſoon as the complaint ſhews itſelf among the cattle, aſſiſtants are procured, if poſſible, who are thus rendered leſs ſuſceptible of it, otherwiſe the buſineſs of the farm could ſcarcely go forward."

I have not got much additional information on this fact. It ſeems, however, ſufficiently authenticated, that people may have the Cowpox after they have had the Smallpox, but it will require more nice attention to ſatisfy the query, whether, in ſuch caſes, the Cowpox affects the whole conſtitution; or is only a local affection.

Mr. Downe,* in particular, ſpeaks of a family who did not take the Cowpox when much expoſed to the infection, becauſe they had all gone through the Smallpox; except one who had been affected already with the Cowpox. I met with a ſervant at Mr. Rhodes' farm, on the Hampſtead Road, who atteſted that he had ſuffered the Cowpox 14 years ago, but that long before that time he had gone through the Smallpox.

Profeſſor Wall † ſays, "The anſwer to the queſtion, Whether a perſon is capable of taking the Cowpox, who has gone through the Smallpox? is of ſome, decidedly, that ſuch a perſon is not liable to the infection of the Cowpox.

---

* Mr. Downe's Letter of Auguſt 30th.

† Letter of Profeſſor Wall, above cited.

Others of equal experience have anſwered this queſtion with doubt."

At Mr. Rhodes' farm, at Iſlington, I found that one of the male ſervants, who had been long employed in taking care of Milch Cows in the environs of London, diſtinguiſhed the Cowpox very clearly from common inflammation of the teats, with ſcabs; with which ſeveral Cows were, at the time I ſaw this man, affected. He had never contracted the Cowpox, although he had repeatedly been expoſed to the infection, and when others took it. He was deeply pitted with the Smallpox; which he laboured under when a young child.

VI. *The Cowpox is not communicated in the ſtate of effluvia, or gas; nor by adhering to the ſkin, in an imperceptibly ſmall quantity; nor ſcarce unleſs it be applied to diviſions of the ſkin, by abraſions, punctures, wounds, &c.*

Some morbific poiſons are communicated to animals, only in the ſtate of inviſible effluvia, or gas; *e. g.* the miaſmata which produce intermittent fevers; the contagion which produces the ulcerous ſore throat; that which occaſions the Hooping Cough, the Meaſles, &c. Other morbific poiſons are communicated, both in the ſtate of effluvia, and in a palpable or viſible quantity, *e.g.* the variolous poiſon; the matter which produces in oxen, the murrain, or lues bovilla, &c. Others again are not propagated in the ſtate of effluvia, or gas, but in a palpable or viſible quantity only, as the hydrophobic poiſon; the ſyphilitic, &c.; and to theſe laſt muſt now be added the morbific poiſon of the Cowpox.

It does not appear that the diſeaſe ſpreads from any infected Cow among other Cows, which are fed in the ſame ſtable, like a contagious diſeaſe. Perſons who ſleep in the ſame bed with one who is labouring under the Cowpox, are not, in this way, liable to be infected, (ſee Jenner, p. 68 and 69.) It is not even propagated from the Cows to the milkers for the moſt part, unleſs the ſkin of the part of the hands, to which the matter is applied, be divided.

This property of the Cowpox infection not being propagated, ſo as to produce diſeaſe but by contact, and then only when applied in a palpable or viſible quantity, and alſo ſcarce, unleſs the ſkin be divided, is a moſt important one. Yet a few inſtances, I apprehend, will ſuffice to ſhew clearly under what circumſtances the Cowpox infection produces diſeaſe.

A boy who was inoculated for the Cowpox, ſlept while he was labouring under the diſeaſe with two other boys, but neither of them, by this expoſure to the infection, got the Cowpox. A young woman who had the Cowpox, with ſeveral ſores, which maturated to a great extent, ſlept in the ſame bed with a fellow dairy-maid, who never had been infected either with the Cowpox or Smallpox, but the diſeaſe was not communicated. A young woman, on whoſe hands were ſeveral large ſuppurations from the Cowpox, was a daily nurſe to an infant, but the infant was uninfected, (ſee Jenner, p. 68 and 69.)

I am inſtructed, uniformly, by my correſpondents, that the Cowpox ariſes only from matter evidently applied, moſt frequently, by friction of the diſeaſed teats in milking; but ſometimes from the matter lodging accidentally on ſome ſoft part; yet even under this circumſtance, it frequently fails to infect, unleſs there be a cut, ſcratch, puncture, &c. of the hands.

Mr. Drewe mentions the inſtance of a woman who loſt her eye ſight, in conſequence of the infectious matter being heedleſsly applied to the eye: and that the Cowpox has been obſerved to take place from handling the milk pail, on which the infectious matter had been incautiouſly allowed to remain.

VII. *The local affection in the Cowpox, produced in the caſual way, is generally more ſevere, and of longer duration, than uſually happens in the local affection in the inoculated Smallpox; but in the Cowpox the fever is in no caſe attended with ſymptoms which denote danger, nor has it, in any inſtance, been known to prove mortal.*

The Cowpox in the incidental way, for ſufficiently obvious reaſons, moſt commonly affects the palms of the hands. There is a wide difference in the degree of the local affection. I am inſtructed, by my communications, that the extreme caſes are, 1ſt. Thoſe in which the patients are afflicted with ſo much painful inflammation, as to be confined to their beds for ſeveral days, and have painful phagedenic ſores for ſeveral months. 2dly. Thoſe caſes which are ſo ſlight, that the patients are not confined at all, but get well in a week or ten days. In the more ſevere caſes, in which the inflamed ſpots become veſicular, with edges of the puſtules more elevated than the cuticle, and of a *bluiſh* or *purple colour*; there are pains of the axilla, fever, and now and then a little delirium.

Theſe ſymptoms continue from one to three or four days, leaving ulcerated ſores about the hands, which, from the ſenſibility of the parts, are very troubleſome, and commonly heal ſlowly; frequently becoming phagedenic, like thoſe from which they ſprung. The lips, noſtrils, eyelids, and other parts of the body, are ſometimes affected with ſores; but theſe evidently ariſe from their being heedleſsly rubbed or ſcratched with the patient's infected fingers. Dr. Jenner conſiders the *bluiſh*, or *livid* tint of the puſtules to be characteriſtic of the Cowpox, p. 5.

Mr. Drewe's information on this fact is, "That the ſymptoms are ſimilar to the Smallpox, but *leſs violent*. The puſtules are only about the hands, in the parts which have been in contact with the infected teats." But in anſwer to the queſtion, Whether, on the whole, the Cowpox is a diſeaſe of leſs magnitude than the Smallpox by inoculation? he ſays, "When I conſider what a ſlight diſorder the inoculated Smallpox is, it will not, in my humble opinion, admit of compariſon."

Mr. Dolling ſays, "there is a ſwelling under the arms, chilly fits, &c. not different from ſymptoms of the breeding of the Smallpox. After the uſual time of ſickening, viz. two or three days, there is a large ulcer not unlike a carbuncle, which diſcharges matter."

Dr. Pulteney's account of the ſymptoms is in theſe terms: "A ſoreneſs and ſwelling of the axillary glands, as under inoculation for the Smallpox; then chillineſs, and rigors, and fever, as in the Smallpox. Two or three days afterwards abſceſſes, not unlike carbuncles, appear generally on the hands or arms; which ulcerate, and diſcharge much matter."

Mr. Downe, ſpeaking to this point, ſays, "The ſymptoms, as far as could be aſcertained in the Cowpox, were ſimilar to thoſe of the Smallpox, but I never heard of any who had them in any degree alarming." Again, "The ſymptoms are exactly ſimilar to thoſe of the Smallpox by inoculation, when of the moſt favourable kind. The diſeaſe generally diſappears in about the ſame time that the Smallpox does."

Mr. Giffard tells me, that "he never heard of either men, or cows dying of the Cowpox."

Mr. Woodman, (ſee Mr. Smith's letter,) teſtifies that he never obſerved ſymptoms worthy to be called fever; there was merely "feveriſh heat when the pain was conſiderable."

Dr. De Salis obſerves, that one of the perſons affected with the Cowpox "was much ſtruck with the reſemblance to the ſymptoms he had lately experienced in the Smallpox."

Profeſſor Wall's information is, that "The milkers have the diſorder only once, generally with preceding fever, ſometimes very violent, ſometimes more mild."——"No human creature, or Cow, has been known to be in danger, or to die of the Cowpox." After a ſtrict inquiry at the milk farms adjoining to London, I could not find that any perſon had ever died of the Cowpox.

With reſpect to the animals from which the human creature derives the diſeaſe, it is only known to affect Cows. They have ſometimes, but it is very ſeldom obſerved, a diſorder of the whole conſtitution, "the ſecretion of milk being much leſſened."—The local affection appears with irregular puſtules on the nipples. "At their firſt appearance they are commonly of a *paliſh blue*, or rather of a colour ſomewhat approaching to *livid*, and are ſurrounded by an eryſipelatous inflammation. Theſe puſtules, unleſs a timely remedy be applied, frequently degenerate into phagedenic ulcers, which prove extremely troubleſome." See Jenner, p. 3—4.

Dr. Pulteney acquaints us, that "the diſeaſe makes its appearance on the udder of the Cow, and affects the teats principally, which inflame, and then ulcerate, diſcharging a bloody matter; *but it does not appear that the diſeaſe is more than* *local, as the Cows ſeem not to be out of health in other reſpects.*"

From *Mr. Drewe*'s teſtimony, however, it appears, that the whole conſtitution of the Cow is affected. There being "loſs of appetite and of milk," as well as "ulcerated teats," ſo as to render the animal, in ſome caſes, totally unfit for the dairy. "It is infectious in the herd, and the infection is probably conveyed by the perſon's hand that milks them."

Mr. Downe's information, relating to the preſent part of our inquiry is, that "the only ſymptoms were eruptions about the teats of the Cow, exactly ſimilar to the Smallpox, which gradually become ſore, and fall off; and the infection was ſoon communicated to a whole dairy, as was ſuppoſed by the hand of the perſon who milked. The animals ſuffered much in the operation of milking."

Profeſſor Wall mentions, that the ſymptoms are "blue or livid blotches on the teats and udder, painful and ſuppurating. The Cows are ſeldom ill, ſo as to refuſe their food. Others obſerve, that Cows being naturally diſpoſed to a lax habit of body, are not ſo much afflicted with feveriſh ſymptoms. Some ſay Cows ſuffer no fever at all."

The teſtimony of ſeveral other correſpondents has been already ſtated, that a Cow has never been known to die of the Cowpox; to which I add, in confirmation, that of the milk farmers near London.

VIII. *No conſequential diſeaſe, which ſhould be attributed to the Cowpox, has been obſerved; nor has any diſeaſe been excited, to which there previouſly exiſted a diſpoſition; nor has it been diſcovered to produce a pre-diſpoſition to particular diſeaſes.*

Although a conſiderable body of evidence might be ſtated in confirmation of theſe momentous facts, from the experience of Dr. Jenner, and the uniform teſtimony of my correſpondents: and although we ſhould be inclined to conclude in favour of theſe facts, from the conſideration of the nature of the Cowpox, as far as yet known; yet it does not appear to my judgment that the obſervations and arguments warrant more than concluſions on the ſide of great probability. A number of perſons, many hundreds, have gone through the inoculated Smallpox under the obſervation of many practitioners, without any diſeaſe, or diſpoſition to diſeaſe, being produced by the Smallpox; yet no one doubts, that in a certain proportion of inſtances, diſeaſe has been excited, and diſpoſition to diſeaſe been produced.

We are led then to think, that a greater number, and more accurate obſervations are wanting, to authoriſe poſitive concluſions relating to the facts ſtated under this VIII head.

IX *The Cowpox infection may produce the peculiar local diſeaſe belonging to it, but without the diſorder of the conſtitution; in which caſe, the conſtitution is liable to be infected by the Smallpox infection.*

This fact is not of ſmall conſequence, either in reſpect of general pathology, or practice. Dr. Jenner's work, p. 71, furniſhes us with an unequivocal example of this fact. A woman was affected with the local diſeaſe of the Cowpox in the ordinary way, but without any pains or ſwelling of the axillæ, or any diſorder of the whole conſtitution. This perſon was ſubſequently infected by the Smallpox; but a fellow ſervant, who had ſuffered the Cowpox, (at the ſame time, and from the ſame ſource of infectious matter,) in which there was fever as well as local diſeaſe, could not be infected by inſerting the Smallpox poiſon; even repeated trials for this purpoſe were ſucceſsleſs. Hence they who offer as evidence, inſtances of perſons taking the Smallpox after they have gone through the Cowpox, will do well to aſſure themſelves, that the whole conſtitution was affected in the Cowpox, otherwiſe ſuch evidence will be inadmiſſible. Analogous facts have been aſcertained on good authority, in the Smallpox, although the inſtances are too ſcarce to afford to ſcrupulous minds full proof. It has been found that the uſual local diſeaſe of the inoculated Smallpox may occur, unattended by a diſorder of the whole conſtitution; but yet the matter of ſuch local Smallpox will, in other perſons, produce not only the local diſeaſe, but general eruption and fever: and that the perſon who had undergone this local Smallpox only, will be infected at a future time, ſo as to have both the ordinary local diſeaſe and fever of the Smallpox, with eruptions.

It appears from the obſervations of Dr. Jenner, p. 50, Mr. Drewe, Dr. Pulteney, and others, that during the Cowpox in the human ſubject, inflammation and ſores are apt to be excited by the matter being lodged upon various parts, eſpecially if the ſkin be divided; but no mention is made of freſh fever being excited, nor of the peculiar *livid* and *bluiſh* tint of the Cowpox puſtulous ſores. Enough has been ſaid in a preceding part of this paper to direct obſervers in future to aſcertain more accurately the effects of the agency of the Cowpox infection on the whole conſtitution, and on part of it only.

It will be neceſſary alſo to caution inquirers againſt the error of admitting facts to belong to the Cowpox, as underſtood in this paper, which, in reality, belong to the Chickenpox, or Swinepox, or ſome other eruptive diſeaſe; which, it ſeems, in ſome provincial ſituations, are deſignated by the name of the Cowpox.

Yet another caution is neceſſary in inveſtigating the truth, namely, to diſtinguiſh from the Cowpox, " the puſtulous ſores which appear ſpontaneouſly on the nipples of Cows, and inſtances have occurred, although very rarely, of the hands of the ſervants employed in milking being affected with ſores in conſequence, and even of their feeling an indiſpoſition from abſorption. Theſe puſtules are of a much milder nature than thoſe which ariſe from that contagion, which conſtitutes the true Cowpox. They are always free from the bluiſh or livid tint, ſo conſpicuous in the puſtules in that diſeaſe. No eryſipelas attends them, nor do they ſhew any phagedenic diſpoſition, as in the other caſe; but quickly terminate in a ſcab, without creating any apparent diſorder in the Cow." Like the Cowpox, " this eruption appears moſt commonly in the ſpring, when the Cows are firſt taken from their winter food, and fed with graſs."—Jenner, p. 7.

I obſerved during my viſits to the Cow ſtables near London, in Auguſt and September laſt, that a number of Cows were infected with eruptions, ſores, and ſcabs on their breaſts; eſpecially on their paps. None of the animals had any conſtitutional affection, nor could I learn that any of the milkers were infected. The eruptions now ſpoken of break out, as I was told, eſpecially in new comers. Freſh Cows, it was ſaid, were apt to be thus affected, on account of the much richer food which is given in London than in the country. The ſame kind of ſores, eruptions, and ſcabs, (which muſt be diſtinguiſhed from the Cowpox,) I apprehend, are common in the country; of which the following teſtimonies will be uſeful.

Sir Iſaac Pennington, who could not learn that the Cowpox was prevalent in Cambridgeſhire, ſays, " I find Cows are liable to inflammations of the udders, but they do not affect the hands of the milkers."

A number of Milch Cows are kept near.

Twickenham, and *Mr. Beauchamp*,[*] Surgeon, gave himſelf much trouble to oblige me, by making inquiries according to the direction of my queries. He inſtructs me, "that all the Cow-keepers agree that warts, and ſmall bladders, or puſtules, appear frequently on the teats of the Cow, but never obſerved the animal, or the milkers, to be affected; not even when theſe puſtules were burſt by the hands of milkers who had never ſuffered the Smallpox."

Dr. Beckwith, of *York*, who well merits my beſt thanks, beſtowed great pains in making inquiries among the medical practitioners in his neighbourhood, and the farmers. His report is, "I[†] am well ſatisfied that no ſuch diſeaſe as the Cowpox has ever appeared here in the memory of man; but ſoreneſs and chops of the paps are obſerved, from diſtention by milk in ſummer, never in winter, without affecting the hands of milkers."

In the *Peſtis bovilla*, or murrain, the breaſts, and eſpecially the paps, are ſometimes affected with puſtules, or tubercles[‡]; which, however, ſeem to be in that diſeaſe the leaſt of the unfavourable ſymptoms.

---

[*] Mr. Beauchamp's Letter, Twickenham, Sept. 18, 1798.

[†] Dr. Beckwith's Letter, York, Sept. 19, 1798.

[‡] Illos duntaxat boves, & quidem admodum raros, mortem effugiſſe quibus abſceſſus ac decubitus in formam tuberculo-

Dr. Belcombe, of *Scarborough*, in his obliging letter, obſerves,* " there is a diſeaſe of the paps, which renders them exceedingly ſore and difficult to milk, but it is not infectious, and the ſame Cow has it many times; nor are the hands of the milkers ever ſore from it.—It commonly happens in hot and wet ſummers."

On conſidering the facts of the preceding hiſtory, it appears that ſome uſeful concluſions of a practical kind may be drawn from them.

1. The body of evidence is numerous and reſpectable, declaring that a perſon who has laboured under the Cowpox fever, and local eruption, is not ſuſceptible of the Smallpox. It does not appear that a ſingle well-authenticated contravening inſtance has fallen under obſervation. But I do not apprehend, that accurate

---

rum, ſcabiei, depilationis, vel rhagadum, in uberum papillis fieri contegerit.—Lancisi de bovilla peſte, pag. 3, tom. 2, No. 134.

* Dr. Belcombe's Letter, Scarborough, Sept. 22, 1798.

and able reaſoners will conſider the fact as compleatly eſtabliſhed; though I doubt not they will allow that the teſtimonies now produced, greatly confirm the probability, and that the cautious appropriation of it, in practice, is warrantable. In the preſent inquiry, the atteſtations have been obtained from ſo many perſons, that it ſeems highly improbable indeed, that the contrary inſtances ſhould have been unobſerved, or purpoſely kept out of ſight. If the fact had been ſupported by the teſtimony of one obſerver only, the experience of the world would have juſtified us in demanding the account of the failures; after the example of the keen ſceptic of old, who, on being ſhown the votive tablets of thoſe who had been preſerved from ſhipwreck, inſtead of yielding his aſſent, replied, "Where are the tablets of thoſe who have periſhed?*"

---

* Intellectus humanus in iis quæ ſemel placuerunt (aut quia recepta ſunt et credita, aut quia delectant) alia etiam omnia trahit ad ſuffragationem et conſenſum cum illis. Et licet major ſit inſtantiarum vis et copia quæ occurrunt in contrarium; tamen eas aut non obſervat aut contemnit, aut diſtinguendo ſummovet et rejicit, non ſine magno et pernicioſo præjudicio quo prioribus illis ſyllepſibus authoritas maneat inviolata. Itaque recte reſpondit, qui, cum ſuſpenſa tabula in templo ei monſtraretur eorum, qui vota ſolverant, quod naufragii periculo elapſi ſint, atque interrogando premeretur,

Granting the truth of this fact, its uſefulneſs in practice, in contemplation of it as a ſubſtitute of the Smallpox, muſt depend upon the effects of the Cowpox, in compariſon with the Smallpox, eſpecially in the particulars *of the degree of danger to life*; *the kind of ſymptoms, and their duration*; and *the ſubſequent effects on the conſtitution.*

1ſt. The evidences, ſhewing that no one has ever died, or even been apparently in danger, are the ſame as thoſe for the fact itſelf; that a perſon is not ſuſceptible of the Smallpox after having ſuffered the Cowpox. But the concluſion, with reſpect to the point of danger, is far more equivocal. The compariſon for this purpoſe ſhould be made with not fewer than one, or even two thouſand inſtances. For though in ſeveral hundred examples of the Cowpox, which have been under obſervation, not one perſon has fallen a victim; this might, and indeed has been, the fortunate iſſue of the inoculated Smallpox, of which it will ſuffice to give two inſtances.

Dr. William Heberden informs me, that at Hungerford a few years ago, in the month of

---

anne tum quidem eorum numen agnoſceret, quæſivit denuo; *At ubi ſunt illi depicti qui poſt vota nuncupata perierunt?*— Verulamii Novum Organum, Aphor. XLVI.

October, 800 poor perſons were inoculated for the Smallpox, without a ſingle caſe of death. No excluſion was made on account of age, health, or any other circumſtance, but pregnancy; one patient was 80 years of age; and many were at the breaſt, and in the ſtate of toothing.

Dr. Woodville acquaints me, that in the current year, from January to Auguſt incluſive, out of upwards of 1700 patients inoculated at the Inoculation Hoſpital, including the *in* and *out* patients, *only two died*; both of whom were of the latter deſcription.

Such inſtances of ſucceſs can only be attributed to a certain favourable epidemic ſtate of the human conſtitution itſelf, exiſting at particular times; for the proportion of deaths is uſually much greater; indeed, ſometimes it is very conſiderably greater, owing, probably, to certain unfavourable epidemic ſtates. Of the various different eſtimates which have been made, the faireſt ſeems to be that which ſtates (under a choice of the moſt favourable known circumſtances which can be commanded) one death out of two hundred inoculated perſons. But when it is conſidered that we are now to make the compariſon between the inoculated Smallpox, and what may be called the *natural* Cowpox; when it is conſidered that the inoculated Cowpox, in reſpect of the local eruption and ulceration, is a much leſs painful and ſhorter diſeaſe than the natural, or caſual Cowpox; when it is conſidered that the inoculated Smallpox is eſpecially dangerous from the number of eruptions, and that there is only a trifling local eruption of the part poiſoned in the inoculated Cowpox; when it is conſidered that the Cowpox infection is not propagated in the ſtate of effluvia: I ſay from ſuch conſiderations, it ſeems to be moſt reaſonable to conclude, that *there is great probability of the Cowpox either not proving fatal at all, or at moſt being much leſs frequently ſo than the inoculated Smallpox.*

Further: the compariſon of the two diſeaſes ſhould be inſtituted, with reſpect to danger, under the particular circumſtances of *Pregnancy*; *Age*; *Toothing*; *Peculiar morbid ſtates*; *Peculiar healthy ſtates, or Idioſyncraſies*; and *certain Seaſons, or epidemical States.*

Pregnancy. The inoculated Smallpox is ſo commonly mortal to the unborn in every period of geſtation; and ſo frequently ſo likewiſe to the mother in advanced ſtates of geſtation; that no prudent practitioner would chooſe to inoculate under theſe circumſtances; but to eſcape the taking the diſeaſe by effluvia, in the caſual way*. The expoſure to infection, being ſometimes unavoidable, I confeſs I feel anxious to aſcertain the effects of inoculating the Cowpox infection in ſuch perſons. And on the grounds of the ſlightneſs, and ſhort duration of the Cowpox eruptive fever, and of the merely local eruption, I apprehend a practitioner would be juſtifiable in preferring the inoculation of the infection of this diſtemper to that of the Smallpox.

On another account, the practice of inoculating the Cowpox ſeems recommendable in pregnancy, namely, that of preventing the irritable ſtate of the womb, which is produced by abortion, during the Smallpox. From which irritable ſtate, the female will be very liable, in future, to the misfortune of abortions. This is ſo notorious a fact in brutes, that a Cow which has ſuffered abortion, while labouring under the *Lues bovilla*, or murrain, will ſeldom, in future, bring forth a live calf; and on this account ſuch a Cow becomes greatly degraded in value. Whereas a Cow, which has had the inoculated murrain when a calf, or at leaſt before ſhe was impregnated, is thereby greatly enhanced in value. It was the great

---

* See my paper *On the effects of the variolous infection on pregnant women.* Medical Annals, Vol. IX, Decade 2d, 1795.

Camper who recommended to his countrymen in Holland the general inoculation of calves for the murrain. The matter is moſt advantageouſly inſerted into the ear, tail, or dewlap.

Dr. Layard ſays, oxen may be inoculated, either with the pus of their eruptions, or with the mucus from the noſe; and that few, comparatively with the caſual diſeaſe, die. Oxen were not infected by eating matter of the puſtules with their corn; nor by covering their heads with a cloth, which had been impregnated with ſteam from the breathing of infected oxen.

Whether the unborn animal will take the infection of the Cowpox from the mother, is a queſtion for future obſervation to determine. It has been fully determined (antecedently to the recent controverſy between two eminent anatomiſts, for the honor of the diſcovery,) by pathological obſervations, and demonſtrated by anatomical* experiments and artifices, that the blood of the mother does not paſs to the fœtus, nor return from the fœtus to the mother: for the unborn frequently eſcapes the diſeaſe of the Smallpox, although the mother be affected with it; and when the fœtus is infected, it is uniformly ſubſequent to the eruption, and even to ſuppuration of the puſtules on the mother.* Further injections will paſs from the umbilical

---

* Succus nutritius et chyloſus matris, ex poris et vaſculis uterinis interventu membranæ villoſæ tenuiſſimæ quæ chorio contigua eſt, non ſecus ac chylus a tunica inteſtinorum villoſa recipitur, abſorbetur, et per umbilicalem venam fertur, ex qua cum ſanguine ad hepar infantis deducitur.——————

Nutritur infans mediante ſucco temperato, gelatinoſo matris, qui per ſpongioſam uteri ſubſtantiam tranſcolatur et a ſecundina recipitur, per cujus vaſa ad infantem defertur.—

Ipſa ſecundina quatenus utero adhæret ex ejus ſubſtantia poroſa ſuccum alibilem, non vero ſanguinem matris recipit—Credididerunt veteres, ſanguinem matris nutrire infantem et vaſa uteri cum vaſis ſecundinæ et fœtus invicem connecti: ſed notabile eſt, liquorem ſiphone umbilicales arterias injectum per venam umbilicalem redire, modo placenta illæſa fuerit; ex quo apparet, nullas dari anaſtomoſes vaſorum uteri cum vaſis ſecundinæ et fœtus, neque ſanguinem fœtus rurſus ad venas matris redire.——Placenta uterina ex innumeris capillaribus minimis vaſculis eſt contecta, per quæ dum tranſit ſanguis atteritur, comminuitur inque minimas partes ac globulos dividitur, intima unione ſucci nutritii cum ſanguine facta, ut hac ratione per tenues canaliculos embryonis commodius tranſire et nutritionem præſtare poſſit: unde revera ſecundina in fœtibus vice fungitur pulmonum, qui in fœtu à munere ſuo vacant, quod identidem in intima ſanguiris partium comminutione earumque unione cum chyloſo ſucco conſiſtit: qua de cauſa etiam vena umbilicalis id habet peculiare cum vena pulmonali ut ſanguinem fluxilem floridum, et arterioſo ſimilem vehat quod omnibus aliis venis negatum eſt——F. Hoffmann, t. 1. lib. 1. ſect. 11, cap. xiii.

* See the paper above cited, on the effects of variolous matter in pregnant women.

arteries of the fœtus into its body, and return by the umbilical vein, provided the placenta, or vicarious lungs of the fœtus be entire. The fœtus then does not receive its blood from the mother, nor does the blood of the fœtus circulate through the mother. Yet the infant, before birth, frequently does receive ſome kinds of infectious matter from the mother, viz. the ſyphilitic, variolous, &c. and of conſequence, it ſeems poſſible that it may receive the Cowpox infection, ſubſequently to its formation by the mother's conſtitution. In this caſe we ſhould expect no local diſeaſe, but merely the ſpecific fever.

Age.—Whatever doubts may be entertained of very advanced, or decrepit age, being adverſe to the ſucceſs of the inoculated Smallpox, I am ſure that I ſhall be ſupported by the opinion and practice of a very deciſive majority, that *infancy* is the ſtate in which the largeſt proportion die under inoculation. In medical families, and in large towns; where, to the reproach of our police, perſons labouring under the Smallpox are ſuffered to appear in the ſtreets and public walks; even the moſt cautious practitioners deem inoculation of infants warrantable, but not even then otherwiſe than to avoid the caſual diſeaſe.

Of the effects of inoculation of infants with the Cowpox infection, we have but one or two examples; however theſe are in favour of the practice.

Toothing.—Though the tender irritable ſtate of a new-born child may be a more dangerous one with the Smallpox, than even the ſtate of actual great irritation during the cutting of teeth with this diſeaſe, yet the evidence in point of ſafety is againſt inoculating the Smallpox in the latter caſes. This being the fact, we ſhall feel inclined, under the circumſtance of dentition, to inoculate for the Cowpox; if expoſure to the Smallpox infection be unavoidable.

Peculiar morbid ſtates.—Certain diſeaſes have been found to have no influence in occaſioning the inoculated Smallpox to take place in a ſevere manner. On the contrary, it appears that ſome of theſe diſeaſed ſtates render the Smallpox milder. But of the influence of ſuch morbid conditions on the Cowpox, we poſſeſs no experience to authoriſe an opinion. There are ſome ſtates induced by particular diſeaſes, namely, by the Meaſles, Hooping Cough, &c. which are conſidered to be the occaſion of a ſevere diſeaſe in the inoculated Smallpox: and from this conſideration, under the circumſtance of unavoidable expoſure to the Smallpox infection, it ſeems warrantable to prefer the inoculation of the Cowpox.

Peculiar ſtates of health, or Idioſyncraſies. The caſes of certain families in which the Smallpox is uncommonly ſevere, and of other families in which it is very mild, are ſo frequent as to have fallen under the notice of every phyſician of experience. Some families have been ſo unfortunate, that all their children have died in the Smallpox, either in the caſual way, or by inoculation. It is not a very great rarity to find a family, in which ſeveral children have fallen victims to the Smallpox, and in which a ſingle ſurviving child remains: in ſuch a caſe, the parents, and perhaps the child, are under conſtant apprehenſions of the caſual Smallpox; for they are deterred from inoculation by what has happened. Surely, in ſuch circumſtances, one would be inclined to recommend inoculation for the Cowpox.

During certain ſeaſons, or epidemical ſtates.* At certain times, when the Smallpox is epidemical, it is moſtly violent and very fatal; and at other times it is moſtly neither violent, nor very fatal.

---

* A very mild and innocent endemial Smallpox, occurred in the practice of Dr. Hicks, of which a hiſtory is expected by the profeſſional public.

Such different ſorts of Smallpox ſeem to depend upon prevalent peculiar ſtates of health of people, rather than on the properties of the atmoſphere. When an unfavourable epidemical ſtate is diſcovered, the judicious practitioner will find the queſtion worthy of his contemplation, whether it will not be juſtifiable to introduce the inoculation of the Cowpox, to ſuperſede the Smallpox?

2. *The kind of ſymptoms, and the duration* of the two diſeaſes, muſt be compared together.—If an inoculator could, at his will, command on inoculation of the Smallpox, a ſlight local affection, a trifling eruptive fever, and a very ſmall number of eruptions, there would be no temptation held out on the ſcore of ſymptoms, to inoculate for the Cowpox; becauſe, in this diſeaſe, it appears that we are liable, even by inoculation, to produce a painful phlegmonic inflammation; extenſive and very irritating inflammation of the ſkin around the part poiſoned, and ulceration of the phagedenic kind. A ſufficient number of caſes of the inoculated Cowpox have not been atteſted, to enable us to form

an accurate judgment of the degree of the ſymptoms, in compariſon with thoſe of the inoculated Smallpox. It does not appear that there is nearly ſo great a difference between the conſtitutional diſorder, or fever, of the inoculated Cowpox, and of the caſual Cowpox, as between the diſorder of the conſtitution of the inoculated Smallpox, and the caſual Smallpox: nor of courſe are the advantages of the inoculated Cowpox ſo eminently great, comparatively with thoſe of the caſual diſeaſe, as the advantages of the inoculated Smallpox are ſuperior to thoſe of this diſeaſe in the caſual way. On compariſon of the ſymptoms of the inoculated Chickenpox, the inoculated murrain, and the inoculated Meaſles, with theſe diſeaſes, in the caſual way, by effluvia, the difference is not ſo great as to raiſe conſiderably our expectation of advantages from the practice of inoculation. Although Camper and Layard are advocates for inoculation for the Murrain, *Monſ. de Berg* gives a contrary opinion, declaring, * Que l'inoculation n'offre aucuns avantages réels; ſur-tout dans les cas où l'epizootie eſt très-meurtrière, circonſtance qui d'ailleurs eſt la ſeule dans laquelle elle puiſſe être de quelque utilité.

---

* Lettre a Monſ. Linguet, p. 28, Appendix.

3. *The ſubſequent effects on the conſtitution*, from the Cowpox, muſt be compared with thoſe from the inoculated Smallpox. A diſpoſition to certain diſeaſes, and even diſeaſes themſelves, are not rarely brought on by the Smallpox; but ſometimes alſo diſpoſitions to diſeaſes, and diſeaſes themſelves of the moſt inveterate kind, are removed by the Smallpox. In families, wherever certain diſpoſitions to diſeaſes are hereditary, and which diſeaſes are known to have been excited by the Smallpox; inoculation for the Cowpox on this account may be a conſiderable benefit; but that is on the ſuppoſition, that no diſeaſes, or morbid diſpoſitions, are induced by it. As far as my inquiries have extended, I have found that no ſuch morbid effects have enſued from the Cowpox; but I apprehend that many more obſervations, than have hitherto been made, are requiſite to aſcertain this point ſatisfactorily.

Although pits from the Smallpox are not a diſeaſe, they are at leaſt a deformity, which it is of the greateſt moment for many perſons to prevent; but which, however, no one can certainly guard againſt, even by inoculation; and as in the Cowpox, no ſuch conſequences take place, an inducement is afforded to inoculate for this diſeaſe.

II. As the Smallpox infection is propagated in the ſtate of effluvia, and by adhering in an unſeen, and even inviſibly, ſmall quantity, to cloaths, furniture, &c.: but as the Cowpox infection is only propagated in a viſible quantity, and for the moſt part, only when applied to the divided cuticle; the means of avoiding the Cowpox are eaſy, and obviouſly ſimple. On account of the extremely contagious nature of the variolous poiſon, the extenſive diſſemination of it by inoculation, and the practice of inoculating for the Smallpox being only partial; it appears that the mortality by the Smallpox, has been in a greater proportion ſince, than before the introduction of inoculation. And no ſagacity is required to predict, that ſhould the practice of inoculating for the Cowpox ever become very general amongſt young perſons, the variolous infection muſt be extinguiſhed; and, of conſequence, that loathſome and deſtructive diſeaſe, the Smallpox, be known only by name. And this benefit will accrue, without even the allay of the introduction of a new diſeaſe, it being plain from the nature of the Cowpox poiſon, that it will be eaſy to avoid, and prevent its diſſemination.

III. The Cowpox poiſon appears to alter the human conſtitution, ſo as to render it unſuſceptible of the agency of a different morbific poiſon, namely, of the variolous, in producing the Smallpox. This fact is, I believe, quite a novelty in phyſiology and pathology: it indicates a new principle in the mode of prophylactic practice. And we now ſee upon what principle, diſeaſes from various other morbific poiſons may poſſibly be prevented from taking place; ſuch as the meaſles, ulcerous ſore throat, hooping cough, ſyphilis, &c., viz. in conſequence of deſtroying the excitability of the conſtitution to ſuch poiſons, by the agency of different, and perhaps leſs hurtful ones. Whether the Cowpox preſerves the conſtitution from other morbific poiſons, beſides the variolous, is an undecided queſtion. This fact alſo ſuggeſts the idea, that the œconomy of live beings may be liable to undergo permanent changes in the ſtate of excitability of each, in reſpect of certain ſtimuli, both morbific and innocent ones; which obſervation has not hitherto diſcovered. And on account of the unobſerved agency of ſuch ſtimuli, ſome conſtitutions are utterly incapable, either permanently or for a limited time, of taking the Smallpox, and perhaps other diſeaſes. But if there are in nature means of rendering the human conſtitution unſuſceptible, it muſt be allowed that it is probable there are alſo means of rendering it particularly diſpoſed to certain diſeaſes. And it is poſſible that the ſame conſtitution may, in the courſe of life, undergo repeatedly a temporary ſtate of inexcitability to certain ſtimuli; but there is no reaſon to ſuppoſe that a ſtate of inexcitability, which would otherwiſe be permanent, may be removed by certain morbific ſtimuli.

In the veterinary branch of phyſic, it is a matter of ſtill greater importance to poſſeſs the means of rendering the conſtitution unſuſceptible of the agency of the morbific poiſon which produces the *murrain*: becauſe,

1. This malady is more deſtructive when it is epizootic, than the Smallpox is among human creatures: 2. Becauſe inoculation for it is not nearly ſo beneficial; a great proportion dying under inoculation.

It ſeems of ſmall conſequence in practice, but it is very important on account of phyſiology to determine, whether the human œconomy is rendered unſuſceptible of the Cowpox, by having undergone the Smallpox. In the inſtances related, of people taking the Cowpox who had gone through the Smallpox, the obſervation was not directed with a view to determine, ſatisfactorily, whether the local affection was certainly attended, or preceded by a conſtitutional affection.

IV. If it be true that the ſame conſtitution is liable to undergo repeatedly the Cowpox, to which diſtemper no one has fallen a victim, practitioners may avail themſelves of this mean of exciting an innocent fever, as a remedy of various diſorders; it being a truth, admitted by men of experience, that fevers are occaſionally efficacious remedies; eſpecially for inveterate Chronic maladies; ſuch as, Epilepſy; Hyſteria; Inſanity; St. Vitus's Dance; Tetanus; Skin deformities and diſeaſes, &c.

V. Concerning the *Ætiology* of the diſeaſe, which is the ſubject of our inquiry.—The Cowpox in the human animal has, in every *caſual inſtance* of the diſeaſe, been ſo clearly traced immediately to the Cow's breaſts, affected with the Cowpox, that it would be miſpending time to relate, particularly, the hiſtory of caſes, to prove what is aſſerted. The inoculation with matter from the Cow, produces the ſame diſeaſe as the caſual Cowpox. It appears alſo, that the Cowpox matter of the human animal excites the ſame diſeaſe as the matter from the Cow. It has not been determined by experiment, nor by any obſervation of incidental agency of Cowpox matter; that this matter generated in the human animal, will excite the ſame diſeaſe in the Cow; but from the facts juſt ſpoken of, probably few perſons will doubt that this muſt be the caſe. The Cowpox of the brute is either excited by matter conveyed from a beaſt, labouring under the diſeaſe, (in an obvious way by the hands of milkers) to uninfected Cows; in which manner one diſeaſed beaſt may infect an unlimited number of beaſts; or the diſeaſe is excited by aboriginal Cowpox matter, that is, by matter compounded in the animal œconomy of the Cow, without any matter of the ſame kind having been applied. The means by the agency of which the animal œconomy is put into ſuch a ſtate, as to compound this peculiar matter, are not yet found out. A connection is, however, obſerved between the diſeaſe and the ſpring ſeaſon, the autumn, and change from leſs nutritious to more nutritious food.

It has been concluded by Dr. Jenner, that the aboriginal matter is from the matter of the greaſe of horſes, which gains admiſſion through the milkers who handle ſuch greaſed horſes: but this concluſion has no better ſupport, than the coincidence in ſome inſtances of the prevalence of the two diſeaſes in the ſame farm, and in which the ſame ſervants are employed among the horſes and cows. This aſſertion ſtands in need of ſupport from other obſervations. The *experimentum crucis* ſeems to have been already inſtituted, but without ſucceſs, namely, the inoculation with the greaſe matter of the Cow's breaſt, by Dr. Jenner. It is to excite farther reſearch, that I ſhall mention how ſucceſsleſs my inquiries have been to find the origin of the Cowpox to be in the greaſe.

1. I have found that in many farms the Cowpox breaks out, although no new comer has been introduced into the herd; although the milkers do not come in contact with horſes; although there are no greaſed horſes; and even although there are no horſes kept on the farm.

2. It appears that the Cowpox does not break out under the moſt favourable circumſtances for its production, if it be occaſioned by *the greaſe*. Through the application of my ineſtimable colleague, Dr. William Heberden, I have got much inſtruction relating to this head, from *Sir Iſaac Pennington.* "I[*] have had," ſays Sir Iſaac, "Dr. Jenner's book ſome weeks,

---

[*] Sir Iſaac Pennington's Letter, Cambridge, Sep. 14, 1798.

and the particulars ſtated in it are really aſtoniſhing. I have made inquiries upon the ſubject at Cottenham and Willingham; in which two pariſhes, 3000 Milch Cows are kept, alſo a great many horſes of the rough-legged cart kind, (much liable to the ſcratches or greaſe,) half the pariſhes being under the plough, and the men much employed in milking. But I cannot find that any puſtulous eruptions on the teats of the Cow, or on the hands of the milkers, have ever been heard of; and what ſeems to prove the negative in this caſe, I underſtand inoculation ſucceeds juſt as well in theſe pariſhes, as any where elſe. I cannot find from thoſe concerned in inoculation, that ſhoeing-ſmiths are leſs liable to the infection of the Smallpox than other people."

Dr. Parr is one of the few men of learning, and acknowledged ability, who has imbibed an unfavourable opinion of the whole of the facts, and reaſoning, of Dr. Jenner. But as my Exeter friend merely oppoſes reaſoning and gratuitous ſuppoſitions, to at leaſt ſome well-atteſted facts, I do not think any thing will be gained by ſtating, particularly, his ſentiments on the ſubject, yet I acquieſce to his judgment, "that the aſſertion, that the Cowpox proceeds from the heels of horſes, is gratuitous." He reprobates the concluſions on this part of the ſubject, in ſomewhat opprobrious terms; in which, however, the Doctor himſelf argues more on gratuitous ſuppoſitions, than admitted truths.

"Limpid* fluid is always more active than pus: for a wound no longer ſpreads when the matter becomes purulent. If a diſeaſe does proceed from the matter of the heel of the horſe; it is no other than ſuch as occurs in the human ſubject, namely, topical ulcers, from a putrid fomes; ſince it is probable, (p. 49, Jenner) on Dr. Jenner's own foundation, the eruptions muſt precede its influence.——Men ſervants ſeldom milk cows in this country, and when they do, ſuch inſufferable dirtineſs as to milk with hands ſtreaming with the running of a ſore heel, would not be tolerated in any milking court in this county. Indeed, I think this publication (Dr. Jenner's) is a libel on his own neighbourhood."

At the cloſe of theſe adverſe obſervations, it is but fair to repreſent, that this opinion, reſpecting the origin of the Cowpox, is not merely that of Dr. Jenner—for Mr. Smith (letter above cited) ſays, "Mr. Woodman had a notion of the Cowpox originating from the ſore heels of horſes." And ſeveral male ſervants at the milk farms near London ſaid, " there was ſuch a notion entertained in ſeveral parts in the country, whatever might be its foundation."

---

* Dr. Parr's, M. D. Letter, Exeter, July 22, 1798.

The Cowpox poiſon, and the hydrophobic poiſon, are the only ſpecific morbific matters to the human animal economy, which are clearly proved to be derived from brute animals; for there is only ſmall probability on the ſide of the opinion, that the ſyphilitic poiſon is from the *bull**; the Smallpox from the *camel*†; and the itch from the *dog*. The œconomy then of the human kind, and of Cows, reſemble, in the particular of being excitable to a diſeaſe, the Cowpox, by a certain ſpecific poiſon. Whether other animals; eſpecially males of the bovine kind; can take the Cowpox, has not been determined by experiment, or accidental obſervation. Morbific poiſons, which produce ſpecific diſeaſes, act in this way only on one ſpecies of animal, except in a few inſtances; ſuch as the hydrophobic, and Cowpox poiſons. Camper, Ingenhouſz, and Woodville, in vain, attempted to produce the Smallpox by inoculation, in a number of different brute animals.* J. Hunter ſailed in attempting to excite the ſyphilis in a dog, by inoculating him with the poiſon of the gonorrhœa, and of a ſyphilitic ulcer. Camper atteſts, that in the moſt malignant epizootic murrain; which ſpread moſt rapidly among oxen; yet other animals, ſuch as ſheep, horſes, aſſes, dogs, &c. were not infected by aſſociating with the diſtempered oxen; nor even by feeding with them in the ſame compartments of a ſtable.

---

* Bulls ſo diſeaſed, are ſaid to be *ſtung.—Sir Iſaac Pennington's Letter.*

† See Bruce's Travels, and Dr. Woodville's Hiſtory of Inoculation.

In the eruptive contagious diſeaſe among ſheep in France 40 years ago, other ſpecies of animals which aſſociated with them were not infected.

The newly-obſerved diſeaſe, which prevailed among domeſtic cats in 1796, throughout great part of Europe, and even America, did not appear to affect other animals.

Theſe obſervations may ſerve to remove the fears of thoſe who apprehend, that in conſequence of domeſticating brute creatures, we are liable to render their diſeaſes *endemial.*

---

* Berrier, of Chartres, aſſerts, that monkeys, dogs, ſheep, rabbits, oxen, and other brute animals, are ſuſceptible of the Smallpox; but his evidence has not the weight of a feather againſt the contrary authorities.

Swediaur aſſerts, that monkeys are never affected with the ſyphilis, although in England they are ſubject to the ſcrofula, and that other animals are equally unſuſceptible of the ſyphilis, although *Pauw* affirms, that in Peru, dogs are affected with this diſeaſe.

VI. As it appears that the Cowpox poiſon, after its admiſſion into the human conſtitution, takes effect, or ſenſibly exerts its agency upon the whole economy, in ſeven or eight days; it ſeems probable that it will anticipate, in many inſtances, the agency of the Smallpox poiſon; if the two poiſons be introduced at the ſame time, or nearly ſo; in which caſe the patients ſhould be in future incapable of the Smallpox.

If the morbific poiſon of the varicella, or chickenpox, were to be inſerted at the ſame time with the Cowpox poiſon, it is probable alſo that the Cowpox would ſuſpend the Chickenpox; and perhaps render the conſtitution unſuſceptible of its action in future. But if it be a truth that the rubeolous poiſon can be inſerted by inoculation; and that it affects the conſtitution in ſix days; when this poiſon and that of the Cowpox are introduced at the ſame time, it is moſt likely the Meaſles will ſuſpend the Cowpox.

So long as the conſtitution is under the agency of the Cowpox poiſon, it is not probable that it will be infected by thoſe morbific poiſons, whoſe exiſtence is only known by their effects; (for they operate in too minute a quantity to fall under the notice of our ſenſes) namely, the poiſon which occaſions the Influenza, Hooping Cough, ulcerous Angina; that which occaſions the Typhus fever; the miaſmata, and the contagion of intermittent fevers, &c.

To give an inſtance of application of the facts to practice: if a woman be far advanced in pregnancy, and expoſure to Smallpox infection has been, or is unavoidable; in that caſe it will be of vaſt importance to avert the preſent impending danger, from the female. Under ſuch a circumſtance, the temptation to inoculate for the Cowpox will be felt by the practitioner. And provided the inoculation be inſtituted in not more than ſix or ſeven days after expoſure to the variolous infection, it ſhould, according to principle, pretty certainly preſerve the patient from the Smallpox; or if it be done within ten or twelve days, it ſhould frequently anſwer the purpoſe. For the variolous poiſon lies within the human body, moſt frequently, fifteen days, and often four or five days later, before its general agency is perceived; whereas the Cowpox poiſon acts upon the whole conſtitution in ſeven or eight days after its admiſſion.

VII. The Cowpox poiſon is, according to

the preſent facts, totally different in its nature and effects from every other morbific poiſon, both of cattle and human creatures. It is not neceſſary to enter minutely into the diſtinguiſhing characters of it, as it appears in Cows, as theſe will be collected from the hiſtory of the diſeaſe. I think it right juſt to mention, that care ſhould be taken not to confound the Cowpox with the common warty eruptions and inflammations, ending in ſcabs, which affect the paps only, or at moſt the paps and the udders. It muſt alſo be recollected, that the Cowpox is quite different from the diſeaſes of cattle, which are attended with eruptions of the ſkin in general, ſuch as take place in the murrain, or *peſtis bovilla*, already ſpoken of; on which eruptive diſeaſes more has been written by the Italian, French, and Dutch phyſicians, than by the Engliſh *.

---

* Gli aſſiſtenzi a'bovi ammalati e molt' altri uomini degni di fede m'atteſtarono d'aver oſſervati, in alcuni tumori crudi in diverſe parti del corpo con lingue aride, nere e tagliate, in altri aver veduti tumori maturate.—*P. A. Michelloti*, p. 12, 1711.

La terza oſſervazione fu circa alcuni buovi, che dimorarano in ima ſtalla come alle pecore: due di eſſi cacciarono d' alla cute certi tubercolletti.—*Padre Boromeo*, p. 48.

Annis 1713, 1714, in noſtro Ferrarienſi Ducatu, lues contagioſa boum, &c.——Correpti enim boves cibum reſpuebant;

On account of the notion which, by ſome, is entertained, that the Cowpox infection is of the ſame nature as the variolous, it may be uſeful to point out the great differences between them.

1. The Cowpox poiſon, introduced by inoculation, affects the whole conſtitution at the ſame time, in the ſame degree, and manner, as when admitted in the caſual way; and if the local affection be more ſevere in the caſual, than in the inoculated way, it ſeems to be owing to the ſtructure of the part, namely, the thick cuticle in the palms of the hands.

2. The Cowpox poiſon only affects the conſtitution, through the intervention of the part poiſoned.

3. This morbific poiſon produces no eruption

---

aures ſubito collapſæ procidebant: pili erigebantur; tremor pené univerſalis aderat: oculi lacrymabant: per nares multa lymphæ copia exibat; alvus ſolvebatur: et in aliquibus puſtulæ ſub cute prodibant, ita ut crederent aliqui Variolis boves ipſos affici; tandemque brevi ſeptem dierum ſpatio moriebantur.—*J. Lanzoni,* t. 20, b. 202.

Maculis denique et puſtulis infecta cutis, adeo ut quibuſdam, in mentem venerit cogitare boves non lue, ut nunc res eſt, ſed ipſis puſtulis quas Variolas vocant interire.—*J. M. Lanciſi* de bovilla peſte.

Schreiben an die Generalſtaaten betreffend die Einimpfung der Viehſeuche geſchrieben den 16 Febr. 1770.—CAMPER Von Einimpfung der Kindviehſeuche, ihren Vortheilen und Bedingungen.—CAMPERS *Berliner Geſellſchaft.*

or inflammation, but of, and near, the part to which the poiſon is applied.

4. The Cowpox poiſon from the human ſubject will, in all probability, infect the Cow with the Cowpox; which the variolous poiſon will not.

5. It is aſſerted that a perſon may have the Cowpox who has had the Smallpox.

6. The local puſtulous eruptions in the Cowpox are rather of the nature of veſicles, or phlyctenæ, than purulent eruptions; and the ulceration is apt to be of the phagedenic kind.

7. The Cowpox infection is not propagated in the ſtate of effluvia, or gas.

8. Cowpox matter applied to the eyes, lips, and various other ſoft parts; or to any parts which are punctured, or wounded, in perſons who have already had the Cowpox; or are then ill of the diſeaſe, will excite the peculiar local affection from this poiſon, and perhaps fever.

VIII. There are ſome who are not certain whether or not they have gone through the Smallpox, yet they have ſuch a dread of the diſeaſe, as not to ſubmit even to inoculation for it. To ſuch perſons, the inoculation for the Cowpox, as a ſubſtitute for the Smallpox, muſt prove a happy diſcovery.

Some who have never gone through the Smallpox, have been repeatedly inoculated for the Smallpox, and alſo been expoſed much to the infection of it in the caſual way, yet could not be infected. Perſons, ſo circumſtanced, to be more ſecure, may be inoculated for the Cowpox.

Such is the repreſentation which I ſhall venture to lay before the public, of the benefits likely to accrue to human ſociety, from inoculation for the Cowpox. I ſhall be no better contented with thoſe who will conſider the facts to be already completely demonſtrated, than with the oppoſite extreme opinion, that the whole of the proſpects diſplayed are merely *Eutopian*. The fortunes of the new-propoſed practice cannot, with certainty, be told at preſent by the moſt diſcerning minds. More inſtances are requiſite to eſtabliſh practical and pathological truths. Without aſſuming pretenſions which, I think, unwarrantable, the number of inſtances farther requiſite cannot be ſtated; but one may ſafely aſſert, that well-directed obſervation in a thouſand caſes of inoculated Cowpox, would not fail to produce ſuch a valuable body of evidence, as will enable us to apply our knowledge with much uſefulneſs in practice, and eſtabliſh, or at leaſt bring us nearer the eſtabliſhment, of ſome truths.

They who take a part in the preſent inquiry, muſt not expect to eſcape detraction. But ſuch a proſpect will not divert him from his path, who labours in the culture of phyſic for the ſatisfaction of his own mind; well knowing that it argues egregious ignorance of what is paſſing in the world, to do ſo from any other motive.

Communications received after the preceding Sheets were printed; and additional obſervations.

Mr. Rolph, Surgeon in *Peckham*, practiſed phyſic nine years at Thornbury in Glouceſterſhire. During two of theſe years, he was the colleague of the late *Mr. Grove*, who had been a medical practitioner at Thornbury for near forty years. The greater part of the facts above ſtated, relating to the Cowpox, are familiarly known to Mr. Rolph from his own obſervation, and from the experience of Mr. Grove.

Mr. Rolph tells me, that in Glouceſterſhire the Cowpox is very frequently epizootic in the dairy-farms in the ſpring ſeaſon. It eſpecially breaks out in Cows newly introduced into the herds.

When a number of Cows in a farm are at the ſame time affected, the infection ſeems generally to have originated in the conſtitution of ſome one Cow, and before the milker is aware of the exiſtence of the diſeaſe, the infectious matter is probably conveyed by the hands to the teats and udders of other Cows; hence they are infected. For if the diſeaſe in the Cow firſt affected be perceived in a certain ſtate, and obvious precautions be taken, the infection does not ſpread, but is confined to a ſingle beaſt. Whether the morbific poiſon is generated in the Cow firſt diſeaſed in a given farm, *de novo*, from time to time, and diſſeminated among the reſt of the herd; or, like the Smallpox poiſon, is only communicated from animals of the ſame ſpecies to one another, is not aſcertained. No Cow has been known to die, or to be in danger from this diſorder.

A great number of inſtances of the Cowpox in milkers had fallen under Mr. Rolph's obſervation; and many hundreds more under that of his late partner, Mr. Grove; but not a ſingle mortal, or even dangerous, caſe had occurred. The patients were ordinarily ill of a ſlight fever for two or three days, and the local affection was ſo ſlight, that the aſſiſtance of medical practitioners was rarely required. He had no doubt that the inoculated Cowpox was attended with as little pain and uneaſineſs as the ordinary caſes of inoculated Smallpox.

Mr. Rolph ſays, there is not a medical practitioner of even little experience in Glouceſterſhire, or ſcarce a dairy-farmer, who does not know from his own experience, or that of others, that perſons who have ſuffered the Cowpox, are exempted from the agency of the variolous poiſon.

The late Mr. Grove was a very extenſive Smallpox inoculator, frequently having 200 to 300 patients at one time, and the fact of exemption now aſſerted had been long before his death abundantly eſtabliſhed, by his experience of many ſcores of ſubjects who had previouſly laboured under the Cowpox, being found unſuſceptible of the Smallpox; either by inoculation, or by effluvia.

While Mr. Rolph practiſed at Thornbury, he thinks not fewer than threeſcore inſtances of failure, in attempting to produce the Smallpox by inoculation, occurred in his own practice; all of which were perſons who had been previouſly affected with the Cowpox. In almoſt all of theſe caſes the uninfected perſons aſſociated with thoſe who took the Smallpox, and many were repeatedly inoculated. Although Mr.

Rolph has not, in his recollection, any inſtances of people taking the Smallpox, who gave admiſſible evidence of their having laboured under the Cowpox; he thinks ſuch caſes may, and have indeed occurred to others, where the Cowpox had been only local; it being requiſite that the whole conſtitution ſhould be affected, in order to deſtroy the excitability to the variolous poiſon.

Mr. Rolph declared, that his confidence in the efficacy and ſafety of inoculation for the Cowpox was ſuch, that he regretted he could not, at preſent, procure Cowpox matter to inoculate two of his own children, who had not yet had the Smallpox. This meaſure is, however, determined upon.

As a particular inſtance, Mr. Rolph related the following: A ſoldier's wife, while in the Smallpox, was accidentally in the company of ſeveral farmers at an alehouſe in Thornbury. Two of the company who had gone through the Cowpox, but not the Smallpox, were not affected by the variolous infection; but three others, who had not laboured under the Cowpox, took the Smallpox.

Mr. Rolph's mind was not ſatisfied that a perſon could be conſtitutionally affected by the Cowpox poiſon more than once, but he had no doubt that the local affection might be produced repeatedly. Neither did he certainly know that a perſon was ſuſceptible of the Smallpox, who had been conſtitutionally affected by the Cowpox.

Mr. Rolph, in a letter to Dr. Beddoes, dated June 10th, 1795, communicated the following obſervations. Speaking of a man who could not be infected, although he was repeatedly inoculated for the Smallpox, and although he lived in the ſame room with another man who died of the Smallpox—Mr. Rolph ſays, " it is worthy* of remark, that this man had ſome years before, a complaint incident to Cows, and commonly called the Cowpox; a malady more unpleaſant than dangerous. It is generally received by contact in milking. In the human ſpecies, the complaint is ſometimes local, at other times abſorption takes place, and the glands in the courſe of the abſorbents become indurated and painful. When this is the caſe, *I have learned from my own obſervation, and the teſtimony of ſome old practitioners, that ſuſceptibility to the Smallpox is deſtroyed.* Some advantage may probably, in time, be derived from this fact."

---

* See the queries of *Dr. Beddoes*, concerning inoculation, ſubjoined to his tranſlation of Gimbernat's method of operating for the Femoral Hernia.—London, Johnſon, 1795.

Letter from Dr. Jenner to Dr. Pearſon.

Cheltenham, 27th Sept. 1798.

MY DEAR SIR,

The peruſal of your proof ſheets has afforded me great pleaſure, both from the handſome manner in which you mention my name, and from the maſs of evidence which has poured in upon you from different countries in ſupport of the fact which I ſo ardently wiſh to ſee eſtabliſhed on a ſteady and durable baſis.

Your firſt query reſpecting the Fœtus in Utero I cannot reſolve.

With reſpect to your ſecond, you may be aſſured that a perſon may be repeatedly affected, both locally and generally, by the Cowpox, two inſtances of which I have adduced, and have many more in my recollection. But, nevertheleſs, on this important point, I have ſome reaſon to ſuſpect that my diſcriminations have not been, till lately, ſufficiently nice. I muſt obſerve to you, that what the conſtitution feels from the abſorption of the Virus*, is of a mild and tranſient nature, but the ſores (which ſores, when caſual, are often numerous, and attended with much ſoreneſs and inflammation) are ſufficient of themſelves to occaſion much diſorder in the ſyſtem. Certain it is, that the ſkin is always ſubject to the ulcerative effects of the virus, but whether the conſtitution can repeatedly feel the primary effects of it, I have experiments in view to determine.—Let me here call your attention to a ſimilarity between the Smallpox and the Cowpox. The ſymptoms of abſorption firſt diſturb the ſyſtem, and, ſecondly, the ſyſtem feels the conſequences of the local ſores. Exactly ſo with the Cowpox; and as the Cowpox inflammation is always of the eryſipelatous kind, when it ſpreads over the ſkin to any great extent, it produces ſymptoms not unlike the confluent Smallpox.

It is painful to me to tell you, that I have not an atom of the matter that I can depend upon for continuing the experiments. Mr. —— ——, when he inoculated the boy, did not take matter early enough from the puſtule to ſecure its efficacy,—for after it has loſt its limpid quality, and becomes pus, I fear its ſpecific effects ceaſe.—Much precaution is therefore neceſſary in the progreſs of the inquiry; and this is my grand fear, that the diſcovery may fall into diſcredit from a want of that attention, in conducting the experiments which the ſubject requires. For example—a perſon may conceive he has the Cowpox matter on his lancet, when, in fact, there may be only a little putrid pus—with this he ſcratches the ſkin, and excites diſeaſe;—the patient is afterwards ſubjected to the inſertion of the variolous poiſon, and unqueſtionably will have the diſeaſe.—Thus a deluſive inference would be drawn, at once hurtful to the cauſe, and particularly injurious to me. However truth muſt appear at laſt, and *from your reſearches, its appearance will certainly be expedited.*"

---

* I uſe this expreſſion as the common language of the day, without conſenting to the truth of it.

I remain

Yours very truly,

E. JENNER.

Abſtract of a Letter from Mr. Fewſter, Surgeon in Thornbury, dated October 11*th*, 1798, *to Mr. Rolph, Surgeon in Peckham.*

“ In the ſpring of the year 1768 I came to live at Thornbury, where I have reſided ever ſince. In that very year, from the following occurrence, I became well acquainted with the diſeaſe called Cowpox. The late Mr. Grove and myſelf formed a connection with Mr. Sutton, the celebrated inoculator; and to inoculate for the Smallpox, we took a houſe at Buckover. We found in this practice, that a great number of patients could not be infected with the Smallpox poiſon, notwithſtanding repeated expoſure under moſt favourable circumſtances for taking the diſeaſe. At length the cauſe of the failure was diſcovered from the caſe of a farmer who was inoculated ſeveral times ineffectually, yet he aſſured us he had never ſuffered the Smallpox, but, ſays he, ‘ *I have had the Cowpox lately to a violent degree, if that's any odds.*’ We took the hint, and, on inquiry, found that all thoſe who were uninfectable, had undergone the Cowpox. I communicated this fact to a medical ſociety, of which I was then a member, and ever afterwards paid particular attention to determine the fact. I can now, with truth, affirm *that I have not been able to produce the Smallpox, in a ſingle inſtance, among perſons who have had the true Cowpox*; except a doubtful caſe which you are acquainted with. I have, ſince that, inoculated near two thouſand for the Smallpox, amongſt whom there were a great number who had gone through the Cowpox; the exact number of theſe I cannot tell, but I know that they all reſiſted the infection of variolous matter.

With regard to your queſtions—

1. As to danger from the Cowpox. In the courſe of thirty years I have known numberleſs inſtances of the diſeaſe, but never knew one mortal, or even dangerous caſe.

2. Is a perſon ſuſceptible of the Cowpox more than once? I cannot anſwer this queſtion.

3. Is the Cowpox, in the natural way, a more or leſs ſevere diſeaſe than the inoculated Smallpox? I think it is a much more ſevere diſeaſe in general than the inoculated Smallpox. I do not ſee any great advantage from inoculation for the Cowpox. Inoculation for the Smallpox ſeems to be ſo well underſtood, that there

is very little need of a ſubſtitute. It is curious however, and may lead to other improvements*.

4. Have you ever known any pregnant woman labour under the Cowpox? Yes, many—but it *never produced abortion.* The ſtate of the fœtus I cannot ſpeak of.

5. Are Cows affected at certain times more than at others? They are eſpecially affected from February to May, when there is the greateſt number of greaſed horſes.

I cannot procure any Cowpox matter this ſeaſon."

From Mr. Bird to Dr. Pearſon, Oct. 16, 1798.

Mr. G. G. Bird, of *Hereford*, who is now attending medical lectures in London, tells Dr. P. that he has very often ſeen the Cowpox in Cows, and human creatures, near *Glouceſter*—that it attacks the ſame perſon repeatedly, and once the third attack was obſerved to be more ſevere than the preceding ones, but ordinarily the reverſe is the fact. It appears with red ſpots on the hands, which enlarge, become roundiſh and ſuppurate—tumors take place in the armpit—the pulſe grows quick—the head aches—pains are felt in the back and limbs, with ſometimes vomiting and delirium. It is moſt common in a wet ſpring. No one dies of the diſeaſe.

---

* I have ſtated the writer's opinion of inoculation for the Cowpox, in obedience to a law impoſed on myſelf, of not ſuppreſſing any part of the evidence communicated, however differently I might reaſon on the facts.—NOTE *by the author of this Inquiry.*

Dr. Currie, of *Cheſter*, informs Mr. Thomas that the diſeaſe called Cowpox is unknown to the medical practitioners and farmers in Cheſhire.

Dr. Richard Pearſon, of *Birmingham*, in his obliging letter of the 26th Sept. laſt, ſays, "From this united evidence, (that of medical perſons and farmers) I think it may be inferred that the diſeaſe, which Dr. Jenner calls *Variolæ vaccinæ*, is not epizootic in the counties of Warwick, Worceſter, and Stafford."

Dr. Woodville acquaints me, "that not being able to procure Cowpox matter, he is making trials with *greaſe matter*: from which, no doubt, ſome uſeful information will be obtained."

Extract of a Letter from Mr. Thomas Wales, Surgeon at Downham, Norfolk, dated Oct. 18, 1798, to Dr. Pearſon.

I ſhall endeavour to give you ſatisfactory anſwers to your queries.

Previous to my converſation with Dr. Redfearn, I had no knowledge of the diſeaſe called Cowpox, nor was it known to any medical practitioner in this diſtrict. But on inquiring at the dairy-farms, I have got much information concerning the diſeaſe. I this day ſaw two perſons who have had the Cowpox. One of them, a man above ſixty years of age, who has been a milker all his life, knows the diſeaſe very well, by the name of *Pap-pox*, having himſelf experienced the diſorder a great many years ago. He remembers that on that occaſion he was ſick at the ſtomach, and otherwiſe ill for two or three days. The eruption on his hands was conſiderable, and the fingers were ſwollen, probably owing to improper applications; the places healed ſlowly, and left ſcars, which are evident at this day; and when the hands are very cold, theſe ſcars are of a *livid caſt.* He had not gone through the Smallpox before he had the Cowpox, nor has he had the Smallpox ſince this diſeaſe, although he has been repeatedly inoculated.

The other caſe above mentioned is that of a young woman, who had the Cowpox ſome years ago, but never ſuffered the Smallpox, although ſhe has been ſeveral times inoculated.

There are, I find, many other inſtances, of perſons who have gone through the Cowpox, and who have not been able to take the Smallpox, either naturally, or by inoculation.

As the public in this part are not at all aware of the advantages of inoculation for the Cowpox, there are no inſtances of this diſeaſe by this mode of producing it.

I do not find that any perſon has had the Cowpox more than once; that is, a fever with the local affection more than once; but the local affection, without the fever, has occurred in the ſame perſon repeatedly. I have met with two caſes, in which the matter of the Cowpox, by being applied to the eyes, deſtroyed the power of viſion, from the opacity of the cornea ſo produced.

No perſon has been known to die, or even to be in danger, with the Cowpox: although the axillary glands have been much affected, and the ſores on the hands have healed with difficulty.

I have not met with a caſe of a woman who has gone through the diſeaſe during pregnancy.

No inſtance has fallen under my obſervation, of a perſon who has gone through the Cowpox after having had the Smallpox.

With regard to Cows: they are ſubject to the Cowpox more than once. It comes on in the ſpring, when they firſt begin to taſte luxuriant food, but not uniformly every year. One farmer informed me, that he thought it broke out eſpecially when the Cows were fed with turnips in autumn; but I do not depend much upon this obſervation."

Remarks on the term VARIOLÆ VACCINÆ.

For the ſake of preciſion in language, and, of conſequence, juſtneſs in thinking; and conſidering that there is no other way of diſabuſing ourſelves from many of the errors in phyſic, but by the uſe of juſt terms; it is not unworthy of our attention to guard againſt the admiſſion of newly appropriated names, which will miſlead by their former accepted import.

Variola is an aſſumed Latin word, and its meaning will be popularly underſtood in the Engliſh tongue, by ſaying that it is a name of a diſeaſe, better known by another name, the *Small-pox*. Granting that the word Variola is a derivative from *Varius* and *Varus*, uſed by Pliny and Celſus to denote a diſeaſe, with ſpots on the ſkin; the etymological import of Variola is any cutaneous ſpotted diſtemper: but one of the moſt formidable and diſtinct of the cutaneous order, is what is called the *Smallpox*, and, therefore, as I apprehend the name *Variola* has been uſed technically *κατ' εξοχκην*, to ſignify this one kind of ſpotted malady, and no other.

Now as the Cowpox is a ſpecifically different diſtemper from the Smallpox, in eſſential particulars, namely, in the nature of its morbific poiſon, and in its ſymptoms; although the Cowpox may render the conſtitution not ſuſceptible of the Smallpox; it is a palpable *catachreſis* to deſignate what is called the Cowpox, by the denomination *Variolæ vaccinæ*; for that is to ſay, in Engliſh, *Cow-Smallpox*, and yet the Cow is unſuſceptible of infection by the variolous poiſon.

To the name *Cowpox*, or better, perhaps, *Cow-pocken** in our language, I think no reaſonable objection can be urged. According to the more diſtinct and lucid arrangement of cutaneous diſtempers, by Dr. Willan*, the Cow-pox belongs to the *order*, entitled *puſtules*: the word *pock* is known to ſignify *puſtule*: and the prefix *Cow* denotes the only animal in which the morbific poiſon of the diſeaſe has its γενεσις. Farther; if hereafter by the practice of univerſal inoculation, the human animal ſhould be a much more abundant, and better known ſource of this morbific matter, than the brute animal, it is fit that the latter, to which obligations will be owing for an ineſtimable benefit, ſhould live in the grateful memory of mankind; as ought alſo the name of JENNER, who will be ſo great a PUBLIC BENEFACTOR.

---

* Inſtead of the modern orthography Small-poX, &c. in

QUERIES.

It may ſave ſome perſons the trouble of thinking, and time, if a ſet of queſtions be ſtated;

---

which *cs* and *cks* are denoted by *x*, it will be, perhaps, thought preferable to follow the original orthography, *pock*, with its plural *pocken*, as the Germans ſtill do; from whoſe language we have received the words.

* Deſcription and treatment of cutaneous diſorders. Order 1. Puſtulous eruptions on the ſkin: by *Robert Willan*, F. A. S. 4to. with plates, Johnſon, 1798.

which will ſerve to guide obſervation in the acquiſition of facts belonging to the ſubject of inquiry. For this purpoſe the following queries are propoſed:

With reſpect to Brutes.

1. If a diſtemper of Cows has been noticed, called the Cowpox, or by any other name; in which the breaſts, eſpecially the paps, are affected with puſtulous, and generally purple, or livid eruptions and ſores, by which the hands of milkers are infected; what are its ſymptoms?

2. Can any connection be traced betwixt this diſeaſe and the greaſe of horſes' heels? between the diſeaſe and particular kinds of food, and water? between it and any particular ſtates of the atmoſphere? between it and any particular ſeaſon?

3. Is the ſame Cow liable to the diſeaſe more than once?

4. Has any Cow ever appeared to die of this diſeaſe?

5. Is the Cow ſuſceptible of the Cowpox by the inoculation of the breaſts, with greaſe matter of horſes?

6. Are males of the Ox kind; or other different kinds of brutes; ſuſceptible of the diſeaſe by inoculation with Cowpox matter of Cows?

7. Have Cows, in a ſtate of pregnancy, been obſerved to be affected with this diſtemper?

8. Is the Cow ſuſceptible of the diſeaſe by inoculation of other parts beſide the breaſts?

9. Is the Cowpox matter of human creatures capable of producing the Cowpox in Cows?

With reſpect to Human Creatures.

1. What parts are affected, and what are the ſymptoms of the diſtemper, when contracted in the caſual way?

2. Has any perſon been ſuppoſed to be in danger, or to have died of this diſeaſe?

3. Is the whole conſtitution diſordered *previouſly*, or *only at the ſame time* the puſtules break out? Does the diſorder of the conſtitution diſappear on the appearance of the puſtules? Does the ſame, or a different diſorder of the conſtitution again appear; and under what circumſtances in the courſe of the diſeaſe?

4. If in the courſe of the diſeaſe, when there is no diſorder of the whole conſtitution, the infectious matter of the Cow, or of the human patient already labouring under the Cowpox, be applied to freſh parts, does a diſorder of the whole conſtitution ariſe, as well as a local affection; and of the ſame kind as thoſe which have already taken place?

5. Is the ſame perſon ſuſceptible of the Cowpox local affection, and fever, or diſorder of the whole conſtitution more than once? or only of the local affection more than once? In the inſtances in which the diſorder of the whole conſtitution was ſaid to have occurred more than once, is it not probable that in one caſe only the ſpecific fever of the infection occurred, and in the others a different diſorder of the whole conſtitution, ſuch as was merely from the irritation of the local affection?

6. Is the local affection of the ſame nature on a ſecond, or on farther attacks in the ſame perſon, as on the firſt?

7. In the inſtances of Cowpox in perſons who had gone through the Smallpox, were the local affection and diſorder of the conſtitution of the ſame nature, as in perſons who had not laboured under the Smallpox?

8. Has it been obſerved that a perſon has ever taken the Smallpox, after having gone through the Cowpox? In the inſtances in which the Smallpox was ſaid to have taken place, was it certain that the preceding Cowpox was attended with its ſpecific fever, or was there only a local affection, or at moſt, was there only diſorder ſymptomatic of the local affection?

9. Does the Cowpox render the human con-

ſtitution unſuſceptible of any other diſeaſe, beſide the Small-pox; or, on the contrary, increaſe its ſuſceptibility to any particular diſeaſes?

10. What are the effects of the Cowpox on pregnant women?

11. In the inoculated Cowpox, is the fever leſs conſiderable than in the caſual way?

12. In the inoculated Cowpox, is the local affection ſlighter and of ſhorter duration than in the caſual Cowpox?

13. How long, after the inſertion of the matter is it before the conſtitution is affected?

14. If a perſon were to be inoculated at the ſame time with the Cowpox and variolous matter, which diſorder would appear firſt, or what other effects would be produced?

15. If the Cowpox morbific matter be applied to a ſecreting membrane, *e. g.* to the urethra, will it produce a gonorrhœa, or puſtulous ſores?

16. Does this diſeaſe appear to injure the conſtitution, by producing or exciting other diſeaſes?

17. Does this diſeaſe appear to eradicate any other diſeaſes already preſent?

18. Does the mildneſs or ſeverity of the inoculated Cowpox depend upon the quantity of

matter inſerted; or on the wounds inflicted for inoculation?

19. Does the Cowpox matter produce the diſeaſe as certainly in its dried as in its fluid ſtate; and when old, as when recent; and with equal mildneſs?

20. Are there any particular ſtates of the conſtitution, in which the Cowpox is particularly mild; or, on the contrary, ſevere; as after the Meaſles, Hooping Cough, &c.?

21. Are there particular idioſyncraſies in families or individuals, which influence the Cowpox, as is the caſe in the Smallpox?

22. Is the inoculation of the Cowpox equally ſucceſsful in infancy, manhood, and decrepit age?

23. Do certain epidemic ſtates appear to prevail, which influence this diſeaſe?

Anſwers to the preceding queſtions will be principally obtained by inoculation for the Cowpox, of which there are many opportunities in provincial ſituations; which practice it is one of the chief objects of this publication to encourage.

P. S. *Extract of a Letter from Dr.* FOWLER *to Dr.* PEARSON, *dated Sarum, October* 24, 1798.

MY DEAR SIR,

The diſeaſe called Cowpox is known in this neighbourhood, only to a few farmers, but they underſtand that it is a preſervative from the Smallpox. This morning, *Anne Francis*, a ſervant girl, aged 26 years, was brought to me; ſhe informs me, that ſome years ago bluiſh puſtules aroſe on her hands, from milking Cows diſeaſed by the Cowpox. Theſe puſtules ſoon became ſcabs, which falling off, diſcovered ulcerating and very painful, which were treated by a Cow doctor, and were long in healing. Some milk from one of the diſeaſed Cows having ſpurted on the cheek of her ſiſter, and on the breaſt of her miſtreſs, produced on theſe parts of both perſons, puſtules and ſores, ſimilar to her own on her hands. None of theſe three had ſuffered the Smallpox, nor have they gone through it ſince that time, although they have been much expoſed to the infection; and the ſiſter above mentioned has been inoculated three times for the Smallpox. The Cow doctor who attended theſe three women ſaid, he would forfeit his life if any of them ſhould afterwards have the Smallpox.

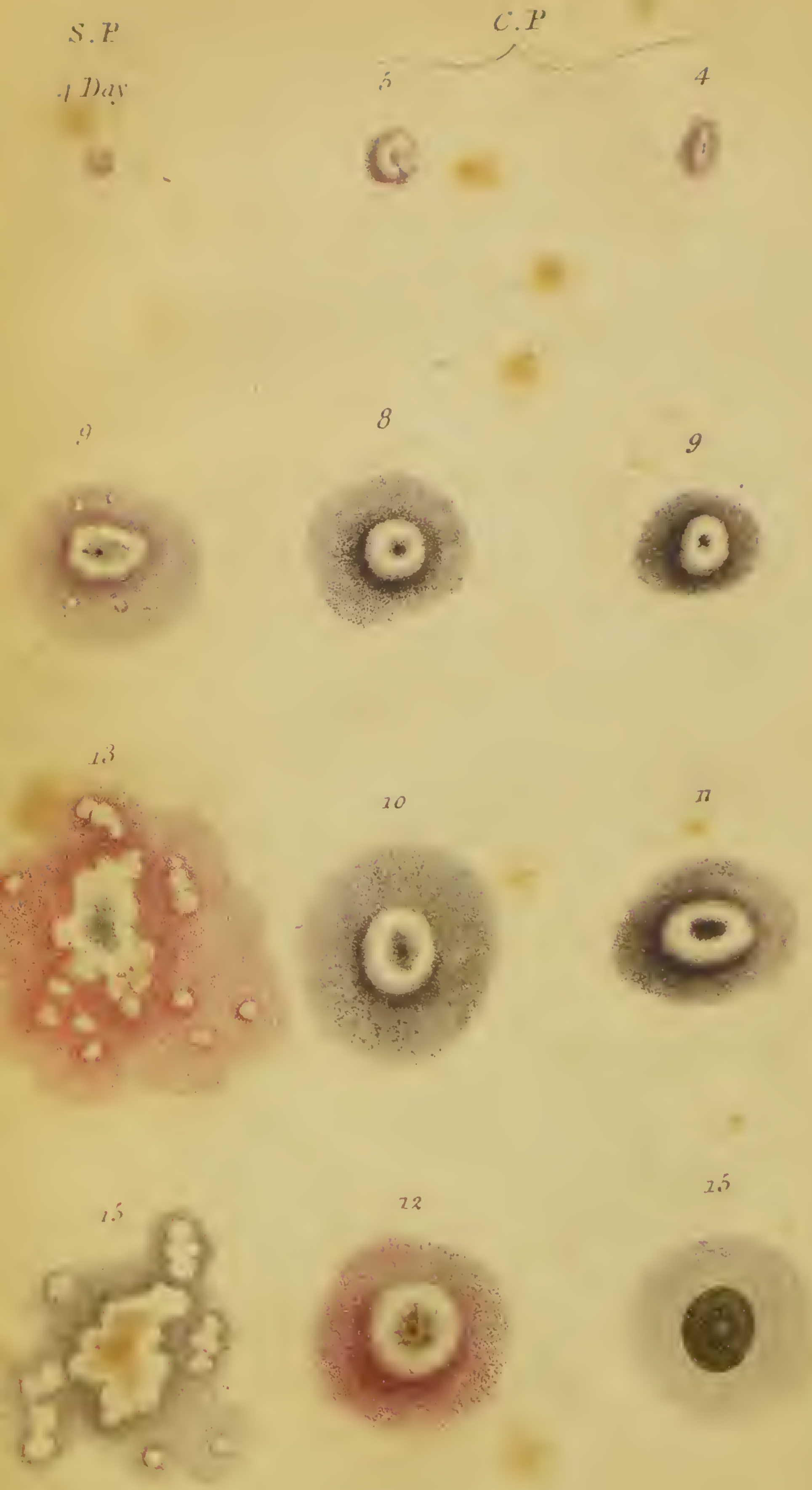
With ſinceret good wiſhes for the ſucceſs of this, and all your undertakings,

I am, &c., &c.

R. FOWLER.

NOTE.—*Mr. Hughes*' Letter, dated Stroud-Water, Glouceſterſhire, Oct. 27, 1798, to *Mr. Bliſs*, Surgeon, Hampſtead, has been juſt ſent to the Author, in anſwer to his Queries. Unfortunately this valuable letter cannot now be publiſhed. It eſpecially confirms, by a number of inſtances, the facts of the ſafety of the Cowpox, and of its producing unſuſceptibility of the Smallpox.

FINIS.


S.P
C.P
4 Day
5
4
9
8
9
13
10
11
15
12
15

AN

EXAMINATION OF THE REPORT

OF THE

COMMITTEE OF THE HOUSE OF COMMONS

ON THE

CLAIMS OF REMUNERATION

FOR THE

VACCINE POCK INOCULATION:

CONTAINING

A STATEMENT OF THE PRINCIPAL HISTORICAL FACTS

OF

THE VACCINA.

By GEORGE PEARSON, M.D. F.R.S.

PHYSICIAN TO THE VACCINE POCK INSTITUTION, SENIOR
PHYSICIAN TO ST. GEORGE'S HOSPITAL, HONORARY
MEMBER OF THE BOARD OF AGRICULTURE, &c.

.... Neque enim benefacta malignè
Detrectare meum est: modo ne *communia* solus
Occupet: atque aliquem nobis quoque reddat honorem.

Ulysses in Ajacem.

Οὐ δῆτα πρίν γ'ἂν τουτον αποφήνω σαφῶς
Τον Κωλοποιὸν, οἷος ὢν θρασύνεται.

Aristoph. Ran. 869.

LONDON:

PRINTED FOR J. JOHNSON, 72, ST. PAUL'S CHURCHYARD.

1802.

REMARKS ON THE REPORT

OF THE

VACCINE POCK COMMITTEE.

ALTHOUGH my knowledge of the history of the *vaccina* * is very considerably extended since my "Inquiry concerning the Cowpox," published in 1798; yet I can at this time, consistently with truth, declare Dr. Jenner to be *the Discoverer to the public* of the Vaccine Inoculation, as I did in my former publication: and the declaration of his being a public benefactor is no longer, as I formerly said, provisional. But it will not be possible to render justice without explaining the sense in which the terms *Discoverer to the public*, are here employed. I mean, then, that Dr. Jenner's publication was the sole primary occasion of all the experiments hitherto instituted, by which a body of evidence has been obtained, quite adequate, in the estimation of sound judgments, to justify the advantages asserted of the new inoculation; and by which experiments also new facts of practical utility have been discovered, and some errors in that first work have, perhaps, been manifested and redressed.

---

* This neologism, *Vaccina,* in the sense here employed, I adopted in 1799, on the proposal of Dr. Ford, of the College of Physicians; and accordingly I introduced it subsequently in several short papers and notices published in the English Journals in 1799, 1800, and 1801; but, a letter from Dr. De Carro, of Vienna, informed me, that the terms *Vaccine* in French, and *Vaccina* in Latin, were as early proposed and used by Dr. Odier, of Geneva. The name *Vacciola* has been recommended by Dr. Stokes, of Chesterfield. The catachresis in the usurpation of the terms *Variolæ Vaccinæ* by Dr. Jenner, I noticed in my *Inquiry* in 1798, page 109, to which, however, the author still adheres; and in the same place I proposed to use the word Cow*pox,* i. e. Cowpocks or Cowpocken only in the plural sense, and Cow*pock* in the singular. Accordingly, when speaking of the disease which is the object before us, I say *Cowpock,* in place of using the word *Cowpox*; because a disorder is here denoted which commonly is attended by a single eruption; but the reason of using the name *Smallpox,* and not *Smallpock,* is hence obvious.

No fact has informed me, in the course of investigation, and during the vaccine practice for these last four years, that human society would have been in possession, at this hour, of the mean of preserving the constitution from a most hurtful disease, by exciting a vicarious complaint, underborne for the most part without suffering pain, and hurtless in the consequences, if the disclosure had not been made by the publication of the treatise on " the Causes and Effects of the Variolæ Vaccinæ, in June, 1798." The making known also a new law in the animal œconomy, *to wit*, of powers in nature for producing incapacity of being acted upon by the most virulent morbific agents, by exciting previously a disease, as in the first instance here exhibited, is calculated to raise the highest expectations of future discoveries from the beneficial career opened *. However, the honour-

---

* The following extract, translated from Don Anton. de Ulloa's Noticias Americanas, page 214, obligingly sent to me by the late Sir *Richard Sŭtton*, Bart. may be considered as affording some evidence of the law above mentioned; it being supposed that incapacity of madness in dogs is produced by another disease.

" It is a thing of notoriety, that in those parts (Peru) madness in dogs or other animals is not known; and this is the case not only in South America, but in all the Indies; but in its place they suffer another evil, which is general, and from which results much mortality amongst them. This enters into the class which may be called Murrain; from it results no inclination to bite as from madness, nor the mischief of communicating it. In some measure it is an equivalent to the Smallpox in rational creatures. They begin by growing heavy, refusing food, growing weak, their head turning so that they fall, and cannot walk. In this state they remain for fifteen or twenty days, some holding out more than others, and in the end the greatest part die. It attacks them usually in the first year, whilst they are puppies; but having once passed it, they have no return of it. The dogs esteemed for sporting are attended to, to be cured, which is the occasion of some more escaping. This disorder was epidemical (*Epicyonic*) in Louisiana in 1767, which exterminated almost all the species, very few having escaped it."

It has been affirmed that dogs, by undergoing a disorder produced by inoculating the Cowpock matter, are rendered incapable of what is called "*the Distemper*;" but, as far as I can learn, this assertion is unproved, as is origin of the Vaccina in "the Grease."—*Note of the Author.*

able Committee of the House of Commons, to whom the late Petition * was referred, have not asserted these grounds (so glorious to the discoverer, and so just to individuals) for the purpose of remuneration; but they vindicate several claims which, in my judgment, are not warranted by the truths of history. Hence I apprehend opinions must be propagated, which deprive other persons of what is owing to them for their discoveries, and for successful labour in determining the grounds of assertions which were unestablished by adequate evidence. These are not the only hurtful consequences. The printed Report of the honourable Committee is already introduced into the public journals as an authentic paper of historic facts, instead of considering it, as I presume to think it ought to be, in the lights of, 1, A representation of testimonies quite sufficient to justify the bestowing a sum of the public money for a public benefaction; but in which inquiry it was not necessary to consider other claims further than they contravened the grounds of their recommendation to the House of Commons. 2, The Report, it seems, should also be considered "with some degree of jealousy, in the light of nominees on a committee to try the merits of a controverted election, as being the friends of the petitioners." (Mr. Bankes', a member of the Cowpock Committee, speech in the House of

---

* See the transcript of the Petition annexed to this work.

Commons. See Morning Herald, June 3, 1802.) And, 3, However capable the honourable Committee certainly are to determine, with strict justice, political questions, yet surely it can be no imputation to allege that they are not equally able to select and judge of medical evidence. By offering, then, to the literary public the printed Report in the light of a strict and complete investigation, in place of looking upon it in the points of view just above stated, it affords an authority, as I think I shall make appear, for several untruly founded assertions of great moment in practice, and becomes a misleading document to historians of the present and future ages.

I have therefore considered that the publishing the result of an examination, and remarks on the printed Report of the honourable Committee, was no more than discharging my duty.

1. In order to submit to the judgment of the public, whether or no, more honourable and just grounds might not have been asserted for the remuneration of the Petitioner.

2. In order to offer evidence for the manifestation of several truths, and for the exposition, perhaps, of some errors and mistakes; and,

3. With the view of obtaining the opinion of the public, whether or no any credit be due to others for the discovery of facts, the detection of ill-grounded assertions; and for labour, ex-

penditure of time, and other sacrifices, in introducing or maintaining the Vaccine Inoculation.

The Committee divide the contents of the Petition into three distinct heads :

" The utility of the discovery itself, which is the foundation of the Petition :

" The right of the Petitioner to claim the discovery :

" The advantage, in point of medical practice, and the pecuniary emolument, which he has derived from it."—Report, p. 3.

Concerning the first head, the experience of at least two hundred thousand instances affords ample justification of the grounds of preference of the vaccine to the variolous inoculation ; but yet it may very fairly be urged, that the practice for the space of three years is not a term long enough to determine the possibility of unfavourable consequences. In this part, however, the honourable Committee, I have no doubt, will give very general satisfaction ; although rigorous justice might perhaps have required a different tribunal for the undecided and doubtful cases produced on the authority of the respectable evidences referred to in the Report, and elsewhere known to have fallen under observation [*].

With respect to the second head:

"The Right of the Petitioner to claim the discovery." It is first in order, to state the very words of the claim, from the Petition itself. "[†] Your Petitioner having discovered that a disease which occasionally exists in a particular farm, among cattle, known by the name of the Cowpox, admits of being inoculated on the human frame with the most perfect ease and safety; and although its symptoms are so mild as scarcely ever to prove even a temporary impediment to the ordinary course of health, yet it is attended with the singularly beneficial effect of rendering through life the person so inoculated secure from the infection of the Smallpox."— I imagine that before the evidence for the Petition was delivered, every one would understand from the above terms, that the Petitioner asserted, that he was the first person who inoculated vaccine matter directly from the cow.

2. In the examination of the claim before us, viz. of *Discovery*, it will be also necessary to state the terms in which it is asserted for the

---

[*] The adverse cases ought not, I think, to be considered, as Dr. Jenner says, to be sinking into *contempt*.

[†] Transcript from a copy of the Petition.

Petitioner in the Report.—" Upon the second head, the *whole of the oral deposition*, as well as all the written documents from abroad, are uniform and decisive in favour of Dr. Jenner's claim to *originality in its discovery;* but as *some pretensions* have been advanced to a knowledge at least of this practice *before Dr. Jenner's publication*, it may be proper to notice *shortly*, what the nature of those claims is, and in what manner they bear upon this part of the Petitioner's case. Such extracts as can be considered in any degree at all material are contained in Nos. 50, 51 and 52. The disorder itself, and its specific property of securing against Smallpox infection, was not a discovery of Dr. Jenner's, nor of any of those whose writings are referred to; for in various parts of England, in Gloucestershire and Devonshire particularly, there was an opinion of that sort current among the common people employed in dairies, which the observation of inoculation for the Smallpox tended to confirm. *It appears not improbable that in some very rare instances this knowledge was carried one step farther, and that the Cowpox was communicated either by handling the teat, or by inoculation from the animal, for the purpose, and with the intention of securing against the danger of Smallpox:* but the practice of which Dr. Jenner asserts himself to be the *original inventor, is the inoculation from one human being to another*, and the mode of transferring, indefinitely, the vaccine matter without any diminution of its specific power, to which it does not appear that any person had ever alleged a title; and these papers and experiments, whatever accuracy of observation, and spirit of research, they may evince in their respective authors, and to whatever extent they may be supposed to go, as they were never given to the public, so neither is there any intimation that they were imparted to Dr. Jenner; nor is it contended that the world became acquainted with this discovery by any other means than by the course of trials conducted by the petitioner, and *his ample* and *unreserved* communications."—*Report*, p. 6, 7.

On reading the part of the *Petition* above cited, I conceive that the words imply that the Petitioner asserts himself to be the Discoverer of the Inoculation of the " disease of Cattle," called " the Cowpox," on the human frame. Now as I fear not it will appear, that the manifestation of TRUTH and the maintenance of JUSTICE are the sole objects of this paper, I will not stop to dispute about the meaning of the words and phrases of the *Petition* and the *Report*; notwithstanding they may appear to me not quite proper; provided they do not seem likely to mislead. Accordingly, although I apprehend there is no such thing as *inoculating a disease*, no error can issue from this unwarrantably elliptical mode of writing; as I take for granted every one will understand that the Petitioner means that he is the Discoverer of *inoculating the infectious matter* of the Cowpox *from Cattle* on the human frame, so as to produce that disease, by which the capability in such persons of being affected with the Smallpox is destroyed.

Before I offer my next remark, I must for the sake of perspicuity distinguish inoculation for the Cowpock into three kinds; according to the source of the infectious matter, and the mode of infecting the animal œconomy.

1. Casual Inoculation, }
2. Inoculation purposely, } directly from the Cow.

3. Inoculation from the human Animal.

Now it cannot escape the sight of the attentive reader, that the kind of discovery asserted on the part of the Petitioner, is different from that which is vindicated, and declared by the Committee. Whether it was deemed proper to make this change, subsequent to the evidence, from motives of prudence; or from not discriminating precisely the claim of the Petitioner, can only be determined by the composers of the Report. The Petitioner's claim is that of "having discovered that a disease which occasionally exists among cattle, known by the name of the Cowpox, admits of being inoculated on the human frame," with ease, safety, and so as to render the inoculated person secure through life from the Smallpox. But this kind of vaccine inoculation, is that above distinguished by "2. Inoculation purposely and directly from the Cow:" yet the Committee report that "The disorder itself (Cowpox) and its specific property of securing against Smallpox infection, *was not a discovery of Dr. Jenner's*;" i. e. as I suppose we are to understand, that *the casual Cowpox*, above stated, and its antivariolous agency were not his discovery. And further the Committee report, "that it appears not improbable that in some rare instances the 2d kind of inoculation, viz. purposely and directly from the Cow, was also practiced antecedently to Dr. Jenner;" but they state that he is "The original inventor" of the 3d kind of inoculation, above distinguished; namely, from human animal to human animal; as if that were the Petitioner's sole claim, and he had not claimed the discovery of the inoculation directly from the Cow, either casually, or purposely as his right.

I should next, in due course, examine the claim of the Petitioner in the single point now declared by the Committee; but JUSTICE exacts from me first to expose the extent to which the casual inoculation was known to the world, and the simple ingenious efforts of the primitive cultivators in the new field, which are so barely acknowleged in the Report of the Committee.

I. With regard to the effect of the *casual Cowpock*, in preventing the Smallpox, no fact in physic has been more clearly ascertained by a large body of most respectable evidence obtained by me from many of the counties of England, published four years ago*; and that this fact was known long before Dr. Jenner's book appeared. I shall, however, select one evidence only on this occasion, *omnium instar*, which is Mr. Rolph, now a surgeon at Peckham, who had practised physic nine years at Thornbury in Gloucestershire.

" During two of these years, he was the colleague of the late *Mr. Grove*, who had been a medical practitioner at Thornbury for near forty years. The greater part of the facts above stated, relating to the Cowpox, are familiarly known to Mr. Rolph from his own observation, and from the experience of Mr. Grove.

" Mr. Rolph tells me, that in Gloucestershire the Cowpox is very frequently epizootic in the dairy-farms in the spring season. It especially breaks out in Cows newly introduced into the herds. When a number of Cows in a farm are at the same time affected, the infection seems generally to have originated in the constitution of some one Cow, and before the milker is aware of the existence of the disease, the infectious matter is probably conveyed by the hands to the teats and udders of other Cows; hence they are infected. For if the disease in the Cow first affected be perceived in a certain state, and obvious precautions be taken, the infection does not spread, but is confined to a single beast. Whether the morbific poison is generated in the Cow first diseased in a given farm, *de novo*, from time to time, and disseminated among the rest of the herd; or, like the Smallpox poison, is only communicated from animals of the same species to one another, is not ascertained. No Cow has been known to die, or to be in danger from this disorder.

---

* See Inquiry concerning the History of the Cowpox, &c. by George Pearson, M. D. F. R. S. &c. 1798.

" A great number of instances of the Cowpox in milkers had fallen under Mr. Rolph's observation; and many hundreds more under that of his late partner, Mr. Grove; but not a single mortal, or even dangerous, case had occurred. The patients were ordinarily ill of a slight fever for two or three days, and the local affection was so slight, that the assistance of medical practitioners was rarely required. He had no doubt that the inoculated Cowpox was attended with as little pain and uneasiness as the ordinary cases of inoculated Smallpox.

" Mr. Rolph says, there is not a medical practitioner of even little experience in Gloucestershire, or scarce a dairy-farmer, who does not know from his own experience, or that of others, that persons who have suffered the Cowpox, are exempted from the agency of the variolous poison.

" The late Mr. Grove was a very extensive Smallpox inoculator, frequently having 200 to 300 patients at one time, and the fact of exemption now asserted had been long before his death abundantly established, by his experience of many scores of subjects who had previously laboured under the Cowpox, being found unsusceptible of the Smallpox; either by inoculation, or by effluvia.

" While Mr. Rolph practised at Thornbury, he thinks not fewer than threescore instances of failure, in attempting to produce the Smallpox by inoculation, occurred in his own practice; all of which were persons who had been previously affected with the Cowpox. In almost all of these cases the uninfected persons associated with those who took the Smallpox, and many were repeatedly inoculated. Although Mr. Rolph has not, in his recollection, any instances of people taking the Small pox, who gave admissible evidence of their having laboured under the Cowpox; he thinks such cases may, and have indeed occurred to others, where the Cowpox had been only local; it being requisite that the whole constitution should be affected, in order to destroy the excitability to the variolous poison.

" Mr. Rolph declared, that his confidence in the efficacy and safety of inoculation for the Cowpox was such, that he regretted he could not, at present, procure Cowpox matter to inoculate two of his own children, who had not yet had the Smallpox. This measure is, however, determined upon *.

" As a particular instance, Mr. Rolph related the following: A soldier's wife, while in the Smallpox, was accidentally in the company of several farmers at an alehouse in Thornbury. Two of the company who had gone through the Cowpox, but not the Smallpox, were not affected by the variolous infection; but three others, who had not laboured under the Cowpox, took the Smallpox.

" Mr. Rolph's mind was not satisfied that a person could be constitutionally affected by the Cowpox poison more than once, but he had no doubt that the local affection might be produced repeatedly. Neither did he certainly know

---

* These children went through the inoculated Vaccina in March, 1799, under my observation.

that a person was susceptible of the Cowpox, who had been constitutionally affected by the Smallpox."

They who are so unreasonable as not to be convinced by the preceding statement of Mr. Rolph, may receive further information from the accounts of Mr. Drewe, Mr. Dolling, Dr. De Salis, Dr. Pulteney, Mr. Smith, Mr. Downe, and many others, to be found in the publication just cited; as well as the subsequent communications of the casual Cowpock preventing the Smallpox in Ireland, and Holstein, time immemorial.

It seems necessary to notice in this place, that there are some published accounts of casual Cowpock previous to Dr. Jenner's. "The Cowpox is a disease well known to the dairy farmers in Gloucestershire—What is extraordinary, as far as facts have hitherto been ascertained, the person who has been infected is rendered insensible to the variolous poison."—See Adams on Morbid Poisons, 8vo. 1795, p. 156. See also Woodville's History of Inoculation, 8vo. 1796, p. 7. And Dr. Beddoes' Queries concerning Inoculation, 8vo. 1795. This author says, "I have learned from my own observation, and the testimony of some old practitioners, that susceptibility to the Smallpox is destroyed by the Cowpox, a disease from Cows, which is a malady more unpleasant than dangerous.

II. With regard to the instances of *Cowpock purposely excited by inoculating directly from the Cow*, to prevent the Smallpox, antecedently to the dates of the Petitioner's trials, the fairest method seems to be to record them in the order of time.

Extracts from Mr. Downe's Letters to Dr. Pearson.

1. Robert Fooks, a butcher, near Bridport, 31 years ago, when about 20 years of age, was at a farm-house when the dairy was infected with the Cowpox. It being suggested to him that it would be the means of preserving him from the Smallpox, which he had never taken, if he would submit to be inoculated with the Cowpox matter; he gave his consent: he was infected by a needle in two or three places in his hand. In about a week the parts began to inflame, and his hand to swell, his head to ach, and many other symptoms of fever came on. The parts inoculated left permanent scars. He was afterwards inoculated twice by my grandfather, and a considerable time after twice by my father, but without any other effect than a slight irritation of the part, such as is occasioned in the arms of persons who have already had the Smallpox. The Smallpox has been repeatedly since in his own family, and never avoided it, being

confident that it was not possible to infect him with this disease *.

I know a medical man in this country who was greatly injured in his practice by a prejudice raised against him long ago, for his intention of substituting the Cowpox for the Smallpox.

Extract from Mr. Nicholas Bragge's Letter, dated Axminster, April 12, 1802, *to Sir William Elford, Bart. (a Member of the Committee.)* See the Report, p. 43.

2. It is now more than thirty years ago that I first made experiments and proved that the Vaccine Disease was a preservative against the Smallpox; and it is, I believe, more than twenty years ago, that, through the Rev. Herman Drew, I acquainted Sir George Baker with the observations and experiments I had then made, which I am certain Sir George will readily acknowledge. Unhappily an accident by fire has deprived me of having recourse to them now; but my memory will supply me with enough to con-

---

* This account is extracted from the letters of Mr. Downe, surgeon, dated Bridport, Aug. 21 and 25, 1798; April 8, 1802; June 7, 1802. Why the Committee of the House of Commons did not record in the Report any extract from these letters, I am unable to explain, as I left with them Mr. Downe's letter of April 8, 1802, which afforded the voucher required for the letter of Aug. 25, 1798, printed in my Inquiry into the History of the Cowpox, in 1798.

vince you that Dr. Jenner is not the only person entitled to the reward that may be thought deserving for such a discovery. It is now, I believe, twenty years ago, that Mrs. Rendall, the wife of a respectable farmer in the parish of Whitechurch, near Lyme, in Dorsetshire, (who is at this time a tenant to Lady Caroline Damer, in the same parish for which I have been concerned as an apothecary for the poor ever since I have been in business) inoculated herself and three or four children for it; *and those children, who have long arrived at manhood, have since inoculated their friends and neighbours whenever an opportunity has offered!*

Extracts from the Letters of the Rev. Herman Drew, to Dr. Pearson, dated Wootton, Sept. 7, 1798, *and Abbots, near Honiton, Devon, April* 11, 1802. See the Report, p. 42, 43.

3. Mr. Justins, a farmer, at Yetminster, in Dorset, inoculated his wife and children with matter taken from the teats of a Cow that had the Cowpox: in about a week from the time of inoculation, their arms were very much inflamed: the patients were very ill; the man was so much alarmed as to call in medical assistance (Mr. Mead, of Cerne.) The patients soon got well, and they have since been inoculated for the Smallpox by Mr. Trobridge, of Cerne, but without effect.

I cannot inform you at what period. Mr. Justins inoculated his family, but I have no doubt but it was previous to Dr. Jenner's practice. I have by this post (April 11, 1802) communicated to Sir William Elford, Bart. a curious fact which came to my knowledge yesterday: That twenty years ago a woman inoculated her children with matter taken from the Cow on the point of a large needle. In a letter dated April 22d, 1802, Mr. Drew says, " Dr. Jenner has a claim, but not an exclusive one, to remuneration. Mr. Bragge, to my knowledge, has been making his observations on the Cowpock for thirty years."

Extract of a Letter from the Rev. Herman Drew, to Sir William Elford, Bart. dated Abbots, near Honiton, April 1, 1802. See Report, p. 44.

4. Dr. Edward Jenner has undoubtedly very great merit in bringing the vaccine inoculation into practice; *but he is no more the discoverer of the Cowpox and its effects than I am.* Nearly twenty years ago I wrote sheets of paper to Sir George Baker on this disorder, and I know not what occasioned his laying aside his intention of publishing his investigations. He had had a previous correspondence with Dr. Pulteney, of Blandford, on the subject.

When Dr. Jenner published his observations, he was followed by Dr. Pearson, of Leicester-square, who was introduced by Sir George to a correspondence with me on this subject, and he repeatedly confesses in print his obligations to me for information. No one can have an higher opinion of the good effects of the vaccine inoculation than I have; it has occupied my thoughts for years, and nothing but Horace's advice, "ne sutor ultra crepidam," has checked me from the use of the infected lancet or saturated cotton. Entre nous *I have had a little successful practice.*

A Letter from William Tucker, Esq. of Coryton, in Devonshire, to Sir William Elford, Bart. April 12, 1802. See Report, p. 44.

5. The above letter states, that Mr. Bragge, twenty years ago, proved the efficacy, and with great assiduity recommended the practice of vaccine inoculation; that Mr. Bragge, through the Rev. Herman Drew, furnished Sir George Baker with a variety of papers in proof of its being a sure guard against variolous infection; and that Dr. Jenner's superior merit consisted in having effected the introduction of vaccine inoculation, and in having also, as it is said, ascertained the means of discriminating the real from the spurious disease.

Extract of a Letter from Dr. Pulteney, to Dr. Pearson, dated Blandford, July 14, 1798. See Report, p. 42.

6. I never heard of any being affected with the disease, except such as have milked the Cows, or handled the udders.

A very respectable practitioner informed me, that of seven children whom he had inoculated for the Smallpox, *five had been previously infected with the Cowpox purposely*, by being made to handle the teats and udders of infected Cows; in consequence of which they suffered the distemper. *These five*, after inoculation for the Smallpox, did not sicken; the other *two* took the distemper.

A farmer in this country inoculated his wife and children with matter taken from the teat of a Cow. At the end of a week the arms inflamed, and the patients were so far affected as to alarm the farmer, although unnecessarily, and induce him to call in medical assistance. They all soon got well, and were afterwards inoculated for the Smallpox, but no irruptions followed. I was not applied to in this case; but the fact is sufficiently ascertained to me.

Extract of a Letter from Mr. W. Dolling, to Dr. Pearson, dated Chattle, April 9, 1802. See Report, p. 43.

7. The farmer alluded to in Dr. Pulteney's letter to you, who inoculated his wife and children with matter taken from the teat of a Cow, and the person mentioned in Mr. Drew's letter, viz. Mr. Justins, is the same person; both Dr. Pulteney's and Mr. Drew's intelligence came from me. I am not certain at this time as to the year, but believe it was on or before the year 1786. The farmer is still living, of whom I can have the particulars.

In a subsequent letter to Dr. Pearson, dated Chattle, June 16, 1802, Mr. Dolling informs him, that Mr. Benjamin Jesty (not Justins) performed the inoculation above-mentioned as early as 1774, and he is still living.

Extract of a Letter from Mr. N. Downe, Surgeon, dated Bridport, June 7, 1802, *to Dr. Pearson.*

8. I have lately heard of a curious fact, that a woman in the Vale of Dorsetshire practised the vaccine inoculation, probably long before Dr. Jenner ever thought of it. Will there be any use now for enquiring into the particulars.

I am well assured Dr. Jenner has no claim as the *first discoverer and performer* of the new inoculation, and if he be *only the promulgator*, I see no propriety in his being exclusively rewarded.

The lower class of people still refuse the vaccine inoculation, from an opinion that the resistance to the Smallpox after it will wear out in a few years, which opinion some medical practitioners encourage.

Extracts from Manuscripts of the late Mr. Nash, Surgeon, at Shaftsbury, as delivered to the Committee by Mr. Keate, and attested by the Son of the Author, Mr. Thomas Nash, surgeon. See the Report, p. 41.

9. It is rather remarkable that no writer should have taken notice of the Cowpox.

I never heard of one having the Smallpox who ever had the Cowpox. The Cowpox certainly prevents a person from having the Smallpox.

I have now inoculated above sixty persons who have been reported to have had the Cowpox, and I believe at least forty of them I could not infect with the variolous virus; the other twenty, or nearly that number, I think it very reasonable to presume (as they were no judges) had not the real Cowpox. It is not my own opinion only, but that of several other medical gentlemen, that convinces me the Cowpox is a prophylactick for the Smallpox.

I have not been able to discover that the human species get it from the Cows in any other manner than by contact with the parts immediately infected, such as in milking; neither do I apprehend that one of the human species can communicate it to another but by the same means; as I have known some of the inhabitants of a house where it was escape it, but none of those who lay in the same bed with the diseased person.

In Mrs. Scammell and Mrs. Bracher, inoculation produced no eruption, no sickness, and little or no suppuration of the arm, the place punctured not being bigger when inflamed and suppurated than a large pin's head. It frequently leaves considerable marks, which are much larger than those of the Smallpox, as large (I have measured some) as a silver threepence.

So far the extracts from these MSS. are as given by the Committee; but I take this opportunity of publishing from these Manuscripts (which are now in my possession) a few other observations, to shew the extent to which the late Mr. Nash carried his researches, and that he knew some truths belonging to the Cowpock not known to any other at this day, and was prepared to publish on the inoculation of it.

The author observes, " My principal intention in publishing being to recommend to the world *a method of inoculation* that is far superior, in my opinion, (and I judge it from experience) to any yet made known. Therefore I hope and trust, although I have no medical friend to enforce it upon the world, that they will give me so far credit for my assertions as to make the experiment, and then it will sufficiently introduce itself. But if from my being so little known they should disregard it, I cannot but remind them, that we had the art of inoculation first from Grecian women, who were both ignorant and illiterate, and put them in remembrance of the saying of Hippocrates, Μη οκνεειν, &c.

Upon looking into the systematic writers, as Sauvages and Macbride, or those who have made catalogues of definitions of disease, as Linnæus, Vogel, and Cullen, I do not find any disease mentioned by them at all like the Cowpox.

In numerous places Mr. Nash repeats his assertion, that those who have had the Cowpox cannot take the Smallpox—Although some people cannot, from the peculiar nature of their constitutions, take the Smallpox; but that cannot be the reason of so many persons in one part of the country, and no other, being incapable of taking the Smallpox.

That it is not more surprizing that no one has written on the Cowpox, since Dr. Heberden was the first who described the Chickenpox, which had been in the country 100 years.

When those who have had the Cowpox are inoculated the arms inflame, but never, or at least seldom, form an abscess, but some hard tumor in the muscular flesh.

How far does the Cowpox agree with the observations of Van Swieten, that " man* alone, and not brute animals, can take the Smallpox."

On Cows, the Cowpox usually appears at first in round pustules, afterwards in ulcers upon the teats and udders, but principally upon the teats. They do not appear to have any sickness before it comes out. Their teats are so far injured by the inflammation it produces, that people are frequently obliged to open the tubes through which the milk passes with a knitting-needle, or some such instrument. One Cow having it will communicate it to a whole dairy. It continues often a long time upon them, unless proper means be employed to cure them, which means are the unguents to the sore parts. The best I am told is soot and butter. This disease is not very frequent in this country.

Cows have the disease but once.

I have not been able yet to determine whether a person who has had the Smallpox can receive this disease.

---

* Dr. Osiander has shewn that Apes are susceptible of the Smallpox, by inoculation. No doubt also of the Cowpock. " Simia turpissima bestia quam similis homini."—*Note by the Author.*

In those who have had the Cowpox, the arm on inoculation for Smallpox is inflamed to a greater extent than in those who have not had it; but then there is little or no matter in the middle where the puncture was made, nor does it fill in those who have not had this disease, but soon heals and dries."

In the Report, p. 25, Mr. Thomas Nash's evidence is stated as follows: "That the papers were written by his father between the years 1781* and 1785; that, at his death, they were sent by his mother to her brother, Mr. Battiscombe, who, without making them public, or divulging their contents, gave them to the witness in 1795 or 1796: he kept them to himself until 1799 or 1800, when he gave them to Mr. Robert Keate: he heard from rumour that Dr. Jenner might have been known to his father: heard it from Mr. Robert Keate: he was inoculated by his father in 1781, and supposes it might have been with vaccine matter, as it appears by the manuscripts, and by information from his mother, that his father was then making experiments on vaccine inoculation."

---

* It appears from the *last page* of the MSS. of Mr. Nash, that his *last observations* were written in the year 1781, so that Mr. Thomas Nash did not correctly recollect the time, when he stated it to be between 1781 and 1785. His father, as Mr. Battiscombe informs me, died Feb. 1785.—*Note by the Author.*

Mr. Robert Keate (p. 25, Report) stated that the papers (of Mr. Nash) alluded to by his uncle, were given him by Mr. Nash, the son of the author; that he understood they were written about 1781. And being asked whether Dr. Jenner was known to Mr. Nash, said, he had heard from Mr. Battiscombe yesterday, that he believed he had heard Mr. Nash, the author of the papers, and his sister, mention the name of Dr. Jenner, but was not at all certain that it was this Dr. Jenner.

Extract of a Letter of Dr. de Carro, dated Vienna, Feb. 4, 1800, to Dr. Pearson, on the Inoculation for the Cowpox from Cows in Holstein.

10. Two Hanoverian gentlemen, Dr. Ballhorn and Mr. Stromeyer, who, as you know, are making experiments with Cowpox, and with whom I correspond, informed me, that this disease is very well known in Holstein; and that a certain Dr. Nessen, of Seegeberg, has collected many facts which prove its antivariolous property. Being myself lately in company with several English gentlemen, who were putting to me many questions on the subject of Cowpox, an American gentleman, Mr. Murray, of Philadelphia, told me that his servant, a German, had

lived three years in the duchy of Holstein, and that he could recollect that he had mentioned to him some facts which coincided much with what I was telling them about the Cow-pox. This gave me the curiosity of speaking to that servant, whom, he told me, was very intelligent, and had shewn often a spirit of observation. Here is the summary of his answers:

That during a stay of three years in Holstein, in the environs of Kiel, he had very often heard of a disease of Cows, called *Die Finnen*, *(finne* means in German *a pimple*, un bouton, *finnig*, pimpled, boutonné) and that he had had frequent occasion of seeing Cows affected with that disease: That its property of preserving against the Smallpox is well known by the farmers and physicians of the country: That in the town of Kiel, the inoculation with the *finnen* is sometimes practised upon children, with the idea of preserving their beauty: That the country people do not like this inoculation, because they pretend that it leaves behind itself several other disorders: That waiting at table he had very often heard gentlemen, and among others a Dr. Ackermann, speak of its antivariolous power: That in great farms men do not milk Cows, but that in the smaller ones, that happens very often: That a disease of horses, called *Mauke* (true German name for *Grease)* is known by all those who take care of them: That old horses, particularly, attacked with the Mauke, are always put in cow-stables, and there are attended by women: That it is particularly in harvest that men in small farms milk Cows: That he never heard of any relation existing between the *finnen* and the *Mauke:* He describes that disease of Cows like a pimple, between flesh and skin, (that is his expression) and says, that when a Cow is affected with it, she loses her milk, and becomes very lean: That farmers kill the sick ones to prevent the contagion: That they salt sometimes those Cows, and give them in winter to eat to their servants, who dislike it so much, that they look upon this treatment as a mark of avariciousness; and that the pustule produced by inoculation is about the size of a pea, and is never attended with any other eruption.

Whatever be the confidence that can be put in the report of this servant, it is notwithstanding remarkable, as confirming the information sent to me from Hanover. I hope, through Doctors Ballhorn and Stromeyer, to learn farther particulars respecting this fact. I forgot to mention, that the servant knew nothing of Dr. Jenner's discovery, and of the experiments to which it has led.

I was not correct when I stated to the Committee that Dr. Jenner was exclusively the first inoculator from human subject to human subject.

There are two cases of inoculation from the human subject, as Dr. Barry, of Cork, informed me in his letter of October 16, 1800. A woman ill of the casual Cowpock by handling her infant then at her breast, produced the vaccina. In two years after, this child slept with another child in the Smallpox during all its stages, and was subsequently much exposed to the Smallpox. Farther: this one which had gone through the Cowpock, was inoculated for the Smallpox; but in none of these circumstances could the Smallpox be excited.—*See Medical Annals for* 1800, *p.* 463, *and Barry on the Cowpox*, *p.* 8.

" A gardener gave himself the Cowpox purposely, by rubbing himself against some person who was affected with it, from a conviction that it would prevent the Smallpox. This happened several years ago, and though he has often put himself in the way of the Smallpox infection, and even lain in the same bed with his children when they were covered with it, he has not taken the disease. If I had time to make the necessary inquiries, I am sure I could multiply instances of this kind."—*Medical and Physical Journal*, *June* 1800, *p.* 503.

The casual Cowpock, or Shinach, has been well known in Ireland as long as perhaps the Smallpox; and as a preservative against the Smallpox, of which Dr. Barry, in a very interesting letter, dated Cork, 16th Oct. 1800, communicated to me, containing a great number of instances of persons, one fifty years ago, who had gone through the Shinnach, ever afterwards being incapable of taking the Smallpox.—*See Annals of Medicine for* 1800, *Vol.* V. *p.* 460.

Dr. Barry has published a very useful and exact account of the nature and effects of the Cowpock, at Cork, 8vo. 1800, in which he shews how well the casual Cowpock was known by the name Shinach in Ireland before Dr. Jenner's book was published.

He gives instances of persons having had the Cowpock above fifty years ago; and says, one woman eighty years of age, asserts, that as long as she can remember the opinion prevailed, that people who had the Cowpock cannot take the Smallpox; *and that people purposely exposed themselves to it, to preserve themselves from the Smallpox.—Barry on Cowpock, p.* 10, 40, 41.

The intelligent and considerate reader will now be enabled to judge from the preceding instances, whether it merely appears, as is stated in the Report, "that it is not improbable that in some rare instances this knowledge was carried one step further, and that the Cowpox was communicated either by handling the teat, or by inoculation from the animal for the purpose, and with the intention of securing against the Smallpox."—(Report, p. 6.) Or whether, as I conceive, it would not have been more consistent with historical facts to have said, that it has been shown by a number of instances, "that the Cowpock was communicated either by handling the teat, or by inoculation from the animal for the purpose, and with the intention of securing against the Smallpox."

III. On the vaccine inoculation from human animal to human animal.

As hath been above stated, the Petitioner asserts, that he has discovered that the Cowpock of Cattle "admits of being inoculated on the human frame;" yet the Honourable Committee confess, (if I rightly understand their words) that the vaccine inoculation from cattle, both *purposely* and *casually*, are not the discovery of the Petitioner; but they assert, although the distinction is not made in the petition, that "the practice of which he alleges himself to be the *original inventor* *, is the inoculation from one human being to another, and the mode of transferring indefinitely the vaccine matter without any diminution of its specific power, to which it does not appear that any person has ever alleged a title."

---

* I do not possess philologic learning to know the difference between inventor, and original inventor.

In this place the reader cannot avoid noticing the unexpected measure of the honourable Committee, not only in narrowing the ground of claim of discovery of the Petitioner, to that of "inoculation from one human being to another," but in starting a new claim, or one to which there are no pretensions in the Petition; to wit, "the mode of transferring, indefinitely, the vaccine matter without any diminution of its specific power." It will, however, naturally be supposed that the evidence in the Report will make it appear that these claims are well grounded; therefore I shall first extract from the pages 13 to 35, in the first place, the declarations which relate to the *discovery of vaccine inoculation*; and 2dly, examine the attestations for *the mode of transferring the vaccine matter.*

I. *Attestations for the discovery of vaccine inoculation.*

The vaccine inoculation was never heard of until after the publication of Dr. Jenner's Works. (Ash, p. 13.)—Considers Dr. Jenner as the original discoverer of vaccine inoculation. (Woodville, p. 13.)—Attributes the discovery solely to Dr. Jenner. (Blane, p. 14.)—Considers Dr. Jenner as the inventor of vaccine inoculation. (Knight, p. 15.)—The inoculation of the Cowpox he considers as having been exclusively introduced by Dr. Jenner. (Dale, p. 19.)—Considers Dr. Jenner as exclusively the discoverer. (Denman, p. 19.)—He derived his knowledge, in the first instance, from Dr. Jenner, afterwards from other sources; refers to letters, No. 51, of the Report, and Mr. Downe's letter. (Pearson, p. 21.)—Upon being asked whether the information contained in these letters arose from Dr. Jenner's publication of his discovery, or from previous knowledge of vaccine inoculation, he answered, That he imagined they were independent of each other; he states, that the discovery of inoculating with the vaccine matter, from one human being to another, is exclusively Dr. Jenner's. He further states, that, although *Dr. Jenner first set on foot the vaccine inoculation, it was established by the extensive practice of other persons;* to wit, Dr. Woodville and himself, who both published treatises and lists of cases on the subject: he said, that they had, in the course of this practice, discovered some error in the theory and opinions first published by Dr. Jenner; which opinions, however, he said, on being questioned, Dr. Jenner had not retracted, or admitted to be erroneous; and being asked whether Mr. Cline had not inoculated with vaccine matter, furnished by Dr. Jenner, before Dr. Woodville began the practice? he said, he could not distinctly recollect. (Pearson, p. 22.)—Considers Dr. Jenner as the person to whom much merit is due, for publishing the cases of vaccine inoculation, which practice he never heard of before that publication. (Keate, p. 25.)—He looks upon Dr. Jenner as the author of the vaccine inoculation, and believes no medical man doubts it. (Bradley, p. 30.)—He never heard of vaccine inoculation previous to its introduction by Dr. Jenner. (Farquhar, p. 30.)—Considers Dr. Jenner as the author of vaccine inoculation. (King, p. 31.)—Dr. Jenner first ascertained the various and important facts upon this subject. (Saunders, p. 32.)—Looked upon Dr. Jenner to be the discoverer of vaccine inoculation. (Lettsom, p. 33.)—Considers Dr. Jenner as the original proposer of vaccine inoculation. (Frampton, p. 35.)

The above testimonies vary in their terms, but they seem reducible to three different heads.

1st. The words of some of the evidences, as I understand, import that Dr. Jenner is the inventor of vaccine inoculation of every kind, without limitation; and consequently we are not warranted in confining the discovery to any one of the kinds above distinguished. (p. 10.) 2. The words of other evidences can only be understood, as I think, to mean that he is the original introducer of the vaccine inoculation. And 3dly, My evidence is the only one in which distinction is made of the kind of inoculation, and which is the single evidence in favour of the question under examination; viz, that the Petitioner was the first inoculator for the vaccine pock, from the human animal to the human animal; but having given proofs that other persons had inoculated, purposely, from the Cow long before him, however fair, a very different conclusion might have been, I chose to give the most favourable one to the Petitioner's interest, by saying I "*imagined*," or *conjectured*, that his inoculations and theirs, "were independent of each other."

Had I thought fit to have reasoned against the pecuniary interests of the Petitioner, surely a fair opportunity was afforded by the knowledge I possessed of many examples of Inoculation for the Cowpock, previously to the seven Cases which he published; but I gave it as my opinion, that the different trials were made independent of each other, as the Committee have very rightly inserted, and no doubt for the advantage of the Petitioner. Further, I more than once declared that I thought the question of reward could not justly be affected by any number of antecedent inoculated cases, because the public derived no benefit from them; nor should I have stirred to prove that such antecedent experiments had been made, but for the tenacity to maintain the claim of being the first Vaccine Inoculator, and the resistance to admit what I deemed very satisfactory evidence; this being the case, I was impelled, for the defence of truth, to state that evidence in so strong a light as to have been irresistibly admissible; and in course proved my assertion.

It may seem very extraordinary that there should appear no contravening evidence but mine, and what was excited by my investigation of the history of the Cowpock, published in 1798, to the claims in the Petition, to the invention of inoculation of the Cowpock from Cattle; not is there in any other part of the Report any distinction made between inoculation from "cattle" and inoculation from the human creature. I am told by Dr. Woodville, indeed, that in his deposition "he declared he did not know who was the first vaccine inoculator," and referred for the proofs on this point, to my publication of 1798; but I mean no imputation by this observation, on the contrary I have no doubt that the honourable Committee were still perfectly justifiable in not inserting that part of Dr. Woodville's evidence, but in giving another part of it. Perhaps some light may be let in by observing that the evidence appears to have been nearly closed * be-

---

* It is not necessary to assign the reason, but it is proper to remark that the evidences are not inserted in the printed Report in the order of the examinations, but with some pains are differently placed; and yet it is obvious that the arrangement

fore I was called upon; and therefore it seems probable that I should not have been summonsed to attend; nor any of those who subsequently gave the adverse evidence on the question of discovery, but for the letter of Mr. Drew, p. 20 (No. 44, Report,) in which my name was quoted; from thence, as I was informed by Dr. Nelson, at that time under examination at the Committee, Sir William Elford proposed that Sir George Baker and myself should receive summonses.

It is necessary for me to remark that, according to the words inserted in the Report, and which I acknowledge to have been mine, it will, I conceive, be understood (for otherwise the evidence is nugatory) I attested that the Petitioner not only afforded exclusively *the first known instances of vaccine inoculation from human animal to human animal*, agreeably to my meaning; but that he established exclusively the fact of the permanent preservation of the antivariolous efficaciousness of the vaccine matter, produced in the animal œconomy, by inoculating successively an indefinite number of human creatures, together with the mildness of the disease so produced; which certainly was not my meaning, as

is not made according to the kind of evidence delivered. Hence the depositions under my name are set down at No. 18, but, according to the order of time, they should have been at about No. 40.

would have most clearly appeared, if the other part of my evidence had been printed in the Report. I cannot assert positively that my words were written down, but I dare swear that I declared to the Committee that I disallowed the Petitioner's right to the fact in the sense just mentioned, in as much as the whole of his experience amounted to but seven or eight cases of inoculation, and a part only of these seven or eight, viz. *four*, were from human subject to human subject, until long after Dr. Woodville and myself had published several hundred instances of inoculated vaccina * from human subject to human subject. It is incumbent on me, however, to state the proofs for this assertion.

In June, 1798, Dr. Jenner first published his "Inquiry into the Cowpox;" in which it appears that the first experiment of inoculation from the Cow, was in May, 1796, p. 32, Case xviii;

---

* The author says his experience "proved that the matter, in passing from one human subject to another, *through five gradations,* lost none of its original properties, J. Barge being the fifth who received the infection successively from William Sumers, the boy to whom it was communicated from the Cow." (P. 44, Inquiry, 1798.)—Now Sumers furnished matter for *Pead,* from Pead it was communicated to *Excell,* from her to *Mary Pead,* and from Pead to *Burge.*" The number which successively were inoculated from human subject to human subject was not *five* but *four.* This is an inadvertency, but proper to be noticed, as the error continues to be propagated by compilers.

after this, he says, the researches were interrupted till the spring of the year, 1798, when the second case of inoculation from the Cow was afforded, p. 37, Case xix; but Cases xx, xxi, xxii, xxiii, are those of four generations of the human subject. I take for granted, that no confessedly judicious physician would, from these instances, feel himself warranted in making any conclusions, further than finding in them a justification of more trials; which, indeed, was the opinion of the author himself, as is manifested by his inference from the preceding experiments: "Should it be asked whether this investigation is a matter of mere curiosity, or whether it tends to any beneficial purpose? I should answer, that, notwithstanding the happy effects of inoculation, with all the improvements which the practice has received since its first introduction into this country, it not very unfrequently produces deformities of the skin, and sometimes, under the best management, proves fatal. But as I have never known fatal effects arise from the Cowpox, even when impressed in the most unfavourable manner, producing extensive inflammation and suppuration on the hands: and as it clearly appears that this disease leaves the constitusion in a state of perfect security from the infection of the Smallpox, *may we not infer that a mode of inoculation may be introduced preferable to that at present adopted*, especially among those families, which, from previous circumstances, we may judge to be predisposed to have the disease unfavourably."

From the time of the above publication, in June, 1798, the author contributed no further inoculated cases to the end of that year; nor could I do more than investigate the history of the Cowpox *, principally by inquiries among provincial physicians and farmers, from whom I was enabled to confirm some of the facts in Dr. Jenner's book, and to render doubtful or disprove others, and to bring to light new observations. Vaccine matter was in vain inquired for; and Dr. Jenner had discontinued the inoculation about the time of publishing his book abovementioned. But from the curiosity excited by my inquiries among the milk farmers near London, as appears from the Inquiry into the Cowpox, which I published, but principally owing to the attention of Dr. Woodville, information was communicated in January, 1799, that the Cowpox was epibootic in Gray's-inn-lane; and at the same time I received the agreeable intelligence that this disease was also raging in the largest stock of Cows on the New Road, near Paddington, to which no one could gain admittance

---

* Inquiry into the History of the Cowpox. By G. Pearson, 8vo. 1798.

but myself. With vaccine matter procured from these sources, Dr. Woodville instituted the trials of the new inoculation in the Smallpox Hospital*; and I carried on mine in certain situations instead of the Smallpox, and among such persons as I induced to undergo the experiment; besides, we promoted the practice by furnishing †Dr. Jenner, of Berkley, and other practitioners, with London vaccine matter for the repetition of the Cowpock inoculation in Gloucestershire and other places.

In about two months, *to wit*, by the month of March, we had inoculated upwards of 160 persons, which was about twenty times the number inoculated at any former period by any one inoculator; without having had occasion to recur to the Cow for fresh matter. And I issued the following printed letter ‡, dated March 12, 1799, among more than 200 practitioners of the united kingdom, to report the progress of the new inoculation with inclosed thread * impregnated with vaccine matter.

---

* Reports of a Series of Inoculation, &c. &c. By William Woodville, M. D. Physician to the Smallpox and Inoculation Hospitals. London, 8vo. 1799.

† Further Observations on the Variolæ Vaccinæ, or Cowpox. By Edward Jenner, M. D. &c. 4to. London, 1799.

‡ Medical and Physical Journal for April, 1799, vol. I. p. 113; and London Medical Review for April, 1799, vol. I. p. 201.—Tilloch's Philosophical Magazine, 1799.

SIR, *Leicester-square, March* 12, 1799.

I hope you will pardon me for taking the liberty to inform you, by way of additional evidence to the testimonies I have published on the subject of the Cowpox, that upwards of one hundred and sixty patients, from two weeks to forty years of age, principally infants, have been inoculated since the 20th of January last, by Dr. Woodville and myself, separately.

I shall at present only communicate the following observations:

I. Not one mortal case occurred.

II. Not one of the patients was considered to be dangerously ill.

III. Although the extreme cases of the severe kind which ordinarily occur in the same number of cases in the inoculated Smallpox did not occur in the above practice, and although many of the patients were even more slightly disordered constitutionally; yet the whole amount of the constitutional illness seemed to be as great as in the same number of patients in the inoculated Smallpox.

---

* For the evidence of the communications to so many Practitioners, the Reader must be content for the present with the continual reference in the public journals, in 1799 and 1800, to me, on account of matter.

IV. None of the patients, namely, above sixty, hitherto inoculated for the Smallpox, subsequently to the vaccine disease, took the infection.

V. One of the most important facts is, that the local affection in the inoculated part, on the whole, was less considerable, and of shorter duration, than in the inoculated Smallpox.

VI. In many of the cases eruptions on the body appeared, some of which could not be distinguished from the Smallpox.

I have sent the matter of the Cowpox pustule, on the thread inclosed, in order, if you approve of the inquiry, to inoculate with it; and I intreat you to favour me with the result of your trials: but I must trouble you to apply the test of inoculating with variolous matter subsequently to the vaccine disorder.

I have the honour to be, &c. &c.

P. S. I am happy to be able to state, that at Berkley, Dr. Jenner has continued his trials of inoculation with vaccine matter, sent from London, with good success.

I should have given you a more circumstantial account of the cases here alluded to, but I think it unnecessary, as Dr. Woodville has a pamphlet in the press on the subject.

At the same time, and in the course of the year, I extended the dissemination of vaccine matter to Germany, as can be shown by letters and reports from Madame Neale * for the Princess Louisa at Berlin; of Mess. Ballhorn and Stromeyer, of Hanover; of Dr. de Carro, Dr. Ferro, and Dr. Frank, of Vienna, &c.—to Geneva, as appears from the letters of Dr. Odier;—to Portugal for the Prince Regent †, by Mr. Correa de Serra, and by Mr. Murphy;—to America, through the hands of Dr. Waterhouse, Currie, Hossack, Chicester, Mitchell, and others;—to Paris and

---

* I think the first parcel of Vaccine matter was sent to Berlin, in the winter of 1799, which succeeded so well that another demand was made in May, 1800.

" S. A. Supplie d'envoyer par le Docteur Pearson de la matière de Cowpox et *elle a parfaitement reussi ici.*"—Lettre de Madame Neale, Berlin, 10 de Mai, 1800.

" Cette Inoculation a parfaitement reussi ici, & je suis parfaitement rassurée. On m'a dit que le Dr. Pearson est mort depuis l'été derniere, c'est pourquoi je ne lui a pas ecrit moi même pour lui rendre compte des succés de cette Inoculation ici. Aucun enfans n'a été fait malade, aucun d'eux n'a repris les petites veroles même en les faisant coucher dans le même lit avec des Enfans dont l'eruption etoit trés forte."—Lettre de ———, Berlin, December 27, 1800.

† *Translation, from the Portuguese, of the Order for the Vaccine Matter.*—The Prince Regent our Lord, has it for service that you should send some more matter of the Cowpox, because with that you sent some experiments were made on subjects, on which the inoculation had no effect, but which inoculated afterwards with the pus of the natural Smallpox, it likewise had no effect. God save you. Palace of Queluz, on the 9th of June, 1800.

D. RODRIGO DE SOUZA COUTINHO.

Mr. Joseph Correa de Serra.

other parts of France, on the application of Mr. de Liancourt, and the Medical Committee of the Ecole Medicale ;—into the British army through Mr. Keate.

In May 1799, Dr. Jenner, in a second publication *, reports his experience with the vaccine matter sent to him at Berkley by Dr. Woodville and myself, first on two children: and from one of these were inoculated at one time eighteen more patients, who all took the disease. An infant, twenty hours old, was also inoculated, and a boy, who the day before the insertion sickened with the measles.

In this treatise a case of inoculated Cowpock in the summer, 1798, by Mr. Cline, is related, which I mention for the sake of noticing the question of the Committee, who (on my stating that the Petitioner had done nothing after his publication in 1798 to promote the inoculation, till after Dr. Woodville and myself had carried our experiments to a great extent in 1799) asked me whether or no I recollected Mr. Cline's practice. I answered, I could not say I did distinctly, but that could only be a single case. Now from the mode in which this answer is inserted in the Report, one would suppose it was destined to falsify my statement ; but, 1. one

---

* Further Observations on the Variolæ Vaccinæ, or Cowpox, &c. By Edward Jenner, M. D. 4to. London, 1779.

case surely ought not to have that effect; 2. the public had no benefit from the case, for it was not published till the year after it occurred. This case of Mr. Cline's was the only one that could be produced by the examining Member of the Committee, by the Petitioner, who is allowed to be present and propose questions; and by the assistant friends of the Petitioner, who also suggested questions.

In May 1799, Dr. Woodville published his Report above cited. He inoculated between the 21st of January and 18th of March, 200 persons, and subsequently 400 more, for the most part successively, without recurring to the Cow for matter. It is true that many of these vaccine cases were conjoined with the Smallpox from the influence probably of the variolous infection; but as the eruptive cases exhibited the genuine Cowpock on the part inoculated, and the matter of it very generally propagated the Vaccina, without eruptions, in private practice and in the country, it is fair to admit them into the class of Cowpock cases.

In May 1799, Dr. Woodville reports* that upwards of 300 more cases of inoculated Cowpock had been under his care since his *Reports* in May preceding.

---

* London Medical Review and Magazine for June, 1799, p. 397.

In August 1799[†], I published the following brief statement of my experience up to this date, in which I referred to some Reports of inoculated cases communicated to me in consequence of my circular letter in March preceding.

A Statement of the Progress in the Vaccine Inoculation; *and Experiments to determine some important Facts belonging to the Vaccine Disease. By* GEORGE PEARSON, M. D. F. R. S. *Physician to St. George's Hospital,* &c.

From the Philosophical Magazine for August 1799.

The collection of testimonies which I published, in November last, in my *Inquiry concerning the History of the Cowpox;* and the Circular Letter, which I issued in March, stating the progress of the *Vaccine Inoculation,* and containing thread impregnated with *matter,* have procured me much information. In particular, through the recommendation of the *Surgeon-general, Thomas Keate, Esq.* the new practice has been introduced into the army; of which a valuable report has been already communicated

---

[†] See the London Review for August, 1799, p. 612, and the Medical and Physical Journal for August, p. 97, and September, p. 213, 1799.

I have been also so fortunate as to obtain permission to practise the *new inoculation* in certain situations where great numbers would have been inoculated for the Smallpox. The cases from these sources, and a pretty large stock from private practice, form a valuable body of evidence, by means of which the professional public will be enabled to estimate (I do not say precisely) the value of the *new practice*; and also answer many of the queries, and supply some of the deficient parts of the history of the vaccine disease, which were stated in the *Inquiry* above mentioned. But such are my occupations at present, and in all likelihood such they will be for a considerable time, that I cannot at this time arrange, for the use of the public, the valuable materials transmitted to me. It will, however, perhaps be not without utility at this time first to state a few general results from the vaccine inoculation; and secondly, to relate some *trials*, from which I apprehend conclusions can warrantably be drawn to promote the investigation now going forward.

Not much more than six months have elapsed since the opportunity was afforded, by the breaking out of the *vaccine disease* in two principal milch farms near London, of obtaining matter for propagating the same disease among human creatures. The *new inoculation* was immediately introduced in London, and soon afterwards in the neighbourhood, as well as in many provincial situations. It is with sincere satisfaction that we can now reckon, at the fewest, 2000 persons who have passed through the Cowpox by inoculation. But in this number I include the very large proportion furnished by him who, so beneficially to the public, and honourably to himself, possesses the office of Physician to the Smallpox Hospital. From the above experience we receive, as I expected, important information.

1. Of the above number it appears that *one* patient died; (Woodville's Reports, p. 151.) and to avoid controversy, let us allow that the death was occasioned solely by the inoculation. Now, according to the justest calculation I have been able to make, as in the inoculated Smallpox one in 200* dies from the disease, it is evident, in

---

* I am fully aware that so great a proportion as one in 200 will not be allowed by many practitioners. And to persons who have been told, and believe, that inoculation for the Smallpox "scarcely ever does any harm,"—that certain practitioners have inoculated many thousands without losing a patient—that others have told their friends "they never had a fatal inoculated case in their whole lives"—I say to such persons, no advantage, on the score of saving life, will be allowed from the Cowpox. But I have conversed with many candid and experienced practitioners, and they are well satisfied that I am warranted in the above statement of deaths in the inoculated

the present state of the practice, that the proportion of fatal cases in the inoculated Smallpox, to the inoculated Cowpox, is as 10 to 1.

2. The constitutional affection, or fever, which occurs in the Cowpock about the 9th day after inoculation, is much more considerable in many cases than was apprehended from the first account by Dr. Jenner, although in a great proportion of cases it is extremely slight, and in many cannot be observed at all. But I must correct my statement in March last, in which I said, " Although the extreme cases of the severe kind, which ordinarily occur in the same number of cases in the inoculated Smallpox, did not occur in the new practice, and although many of the patients were even more slightly disordered constitutionally, yet the whole amount of the constitutional illness seemed to be as great as in the same number of patients in the inoculated Smallpox." Since that Report, or at least for the last

---

variola. I beg leave to say farther, that I believe more persons in proportion have died of the inoculated Smallpox within a few years, than died in the same time 20 years ago. And this may be accounted for from the unwarrantable assertions that the inoculated Smallpox was not attended with any danger; hence the practice is often trusted in the hands of persons not sufficiently acquainted with the treatment fit for different states of the human constitution. I add, that nobody at this time believes the above death was from the Vaccina.

four months, as far as I have observed and been able to learn from others, the whole amount of the constitutional illness was not one half of the whole amount in an equal number of patients inoculated for the Smallpox. Now, whether the greater mildness of the disease depended on the different state of the human constitution in the summer from that of winter, as seems to me most probable; or that it depended on the difference in the state of the vaccine matter, must be determined by future experience in the same seasons.

3. The most remarkable difference in the practice of the last winter, and present summer, has been with regard to the eruptions which so often occurred, especially in the Smallpox Hospital; which eruptions, in many instances, could not be distinguished from those of the Smallpox, and which were wholly unexpected from the original description by Dr. Jenner. No explanation hitherto given consists with the observations relative to these eruptive cases; but the facts are as Dr. Woodville states (Med. Mag.), that they have occurred much less frequently this summer than in the spring and winter preceding. In my private practice, not a single case with eruptions resembling the Smallpox has occurred these last four months, and but a small proportion with any eruptions of other kinds. From

my correspondents I have not had a single case of eruptions like the variolous since that of Dr. Redsearne's, of Lynn; not one of this sort in Mr. Kelson's, of Seven Oaks, report of about 100 patients; not one in Dr. Mitchell's, of Chatham, of about 50 patients; not one in the report of near 100 patients from Dr. Harrison, of Horncastle, communicated to the Right Hon. Sir Joseph Banks; and, in short, not one case with these eruptions appears in the accounts from my other correspondents.

4. The arms have manifested, in many instances, a much more extensively spreading red areola around the inoculated part than is usual in the Smallpox; which redness sometimes extended over the greater part of the whole arm. This appearance is very alarming to both the patient and the inexperienced practitioner; but no danger seems to be attendant on such a state of the parts, for it disappears in at most two or three days, by no means gives pain in proportion to its appearance, and, in the cases I have seen, affects the constitution very little. I would rather call this spreading redness of the skin *erythema* than erysipelas. As to phagedenic ulcers, as they have been called, ensuing from the inoculated part, many sore arms have been produced; but nine out of ten were occasioned, or at least much aggravated, by the tightness of the clothes; by allowing the linen to stick to the

sore; by scratching the pustule; and sometimes by emollient poultices. The experience we have had, then, since January last, in London and in the country, does not agree exactly with Dr. Jenner's account concerning the state of the arms: he thinks some new applications of a caustic nature necessary, in many cases, to prevent secondary symptoms from the sores; but in Dr. Woodville's Report, p. 155, my correspondents, and my own practice, there has not been found any want of applications for such a purpose.

5. Concerning the important point of the certainty of the action of the Cowpock on the human constitution in producing unsusceptibility of taking subsequently the Smallpox; I can only at present say, that I have inoculated many scores with Smallpox matter after the vaccine disease, and never with the effect of exciting the Smallpox. But I have had accounts sent to me, not of people taking the Smallpox after the inoculated Cowpock, but of these taking the Smallpox after the Cowpock in the casual way. I have, indeed, been desired to see even some of my own patients who, I was acquainted, had taken the Smallpox after the Cowpock; but these cases turned out to be either those in which the Cowpock had not in reality preceded, or they were cases of merely local affection from the inoculated Smallpox. With respect to the facts of

other practitioners, I shall at a future time make some remarks on them, to render their accounts consistent with those of Dr. Jenner, Dr. Woodville, and mine. In the mean time I will not allow that any person's evidence is on this point much to be depended upon, unless he really know what are characters of the Cowpock pustule, and what are those of the variolous and some other common eruptions.

From the preceding general results, without entering into a more particular account, I think we may safely conclude, that the Cowpock inoculation is attended with advantages sufficient to force its way speedily into general practice, and that of course it will supersede and ultimately extinguish the Smallpox: but this conclusion is only drawn provisionally, *viz.* that no new facts shall arise adverse to the experience now possessed.

With regard to the second object of this paper, Dr. Jenner, very usefully to human society, and very honourably to himself, first published some FACTS, which I thought it my duty, in common with other members of the profession, to investigate, and have laid before the public. Among these *facts* the 4th and 5th were asserted by me in these terms:

IV. *A person having been affected with the specific fever and local disease produced by the Cowpox poison, is liable to be again affected, as before,* *by the same poison; and yet such person is not susceptible of the Smallpox.*

V. *A person is susceptible of the Cowpox who has antecedently been affected with the Smallpox.*

Neither of these facts being supported by any analogy, a great part of the public seemed inclined to disbelieve them; and not only inclined to disbelieve these facts, but the credit of the others was for obvious reasons thereby weakened. It may be seen in my *Inquiry,* that I thought the assertions stood in need of confirmation, which I was not only unable to procure, but contravening evidence was obtained. Some of my correspondents not only asserted that men were not affected more than once, but that the same Cows had not been known to be affected more than once. It was also positively asserted by some, that " a person is not liable to the infection of the Cowpock after going through the Smallpox, (p. 49, *Inquiry:)* and I saw persons pitted with the Smallpox who had been much exposed to the Cowpock without taking it, (*Ibid.* p. 50.) Notwithstanding my confidence in Dr. Jenner's evidence, I could not help pointing out, in the following words, what I apprehended was a source of error in both cases:—" The evidence for this fact, (viz. IV.) to my apprehension, only proves satisfactorily that the *local affection* of the Cowpox may occur in the same person more than once; but whether the *peculiar* *fever* also occurs more than once in the same son from the Cowpox poison does not app certain, and must be determined by future o servations made with a particular view to this point." Farther: I was so dissatisfied that I wrote to Dr. Jenner to answer my query, Whether, in the instances of the Cowpox occurring more than once in the same person, it was certain that the specific fever was present more than once? The Doctor very obligingly answered my letter, and says, (see Dr. Jenner's Letter, p. 99, of my *Inquiry*,) "You may be assured that a person may be repeatedly affected *both locally and generally* by the Cowpox; two instances of which I have adduced, and have many more in my recollection." But he very candidly adds: "Nevertheless, on this important point, I have some reason to suspect that my discriminations have not been, till lately, sufficiently nice."

With respect to Fact. V. I said in my *Inquiry*, p. 49: "It seems sufficiently authenticated that people may have the Cowpox after they have had the Smallpox; but it will require more nice attention to satisfy the query, Whether, in such cases, the Cowpox affects the whole constitution, or is only a local affection?" Subsequently to this observation I find Dr. Jenner himself, from a theoretical consideration, offers as a "conjecture what experiment must finally determine that they who have had the Smallpox are not afterwards susceptible of the primary action of the Cowpox virus." (Farther Observations, &c. by E. Jenner, M. D. &c. p. 32.)

I shall now relate the *trials* I have instituted, and the *observations* I have made, to obtain *determinations* with respect to these important questions of facts.

Trials to determine whether or not Persons are susceptible of having the COWPOCK VESICLE *and* FEVER, *who have undergone the Smallpox.*

The four first under-named gentlemen being engaged with me in prosecuting physical inquiries, were desirous to experience, in their own persons, the effects of the *vaccine poison.*

1. Mr. Daugerfield was inoculated in one arm by means of a puncture with a lancet stained with fresh but dried matter, rendered fluid by steam just before it was inserted. The other arm was inoculated with thread impregnated with *vaccine matter,* by passing it through the skin. On viewing the arms in three days time, that with the thread appeared inflamed, showing a red elevated small spot; the other arm, which had been punctured, barely shewed a red mark. The punctures had smarted for about twenty-four hours, but no other effects were produced. These red spots disappeared in a few days.

In three weeks further the inoculation was again instituted, but with fluid lymph applied, immediately from the pustule of a patient present, to punctures in each arm. More smarting and more inflammation were produced by this inoculation than by the former. A small quantity of pus was produced in the little red spots from the punctures in about six or seven days, but no disorder arose in the whole constitution.

Mr. Dangerfield was next inoculated in one arm with variolous matter. In the evening of the day of inoculation inflammation appeared, which increased to a greater degree and extent than from the vaccine inoculations. A small phlegmonic tumor in the part inoculated with variolous matter continued for a fortnight, during which time it suppurated, and the pus from it did not heal in less than three weeks further. There was no constitutional affection; but there was pain in the arm-pit in about five days from the inoculation.

2. Mr. Pollock was inoculated in each arm with a lancet armed with fluid matter immediately on taking it from a patient. A little smarting was felt for a day or two, and the parts inoculated were red for several days; but no pustules arose, nor constitutional affection.

3. Mr. Perkins was inoculated by puncturing *one* arm with a lancet stained with recent *vaccine matter*, and the other was inoculated with *variolous matter*. A red spot was seen on each of the parts inoculated the day following; and an itch-

ing sensation, especially from the vaccine matter, was experienced for a day or two. The parts remained elevated and inflamed a little for a few days further, and then got well without suppurating, or being attended by any general disorder.

4. Mr. Armitage, whose constitution was fat and muscular, was inoculated in each arm, with a lancet stained with limpid vaccine matter, immediately on taking it from a patient present. A small red spot was observed the day following, and a little burning sensation was complained of; the red spots grew larger and larger for four or five days, and at length produced a small unequal hard tumor, in which a little pus was generated; but the parts soon got well without any attending disorder of the whole constitution.

In a fortnight after this, each arm was inoculated with variolous matter. More inflammation than from vaccine inoculation arose in a few days, with small tumors, which suppurated: the parts inoculated remained sore for more than a fortnight, but no feverish symptoms ever appeared.

5. G. P. a boy 12 years of age, who had gone through the Smallpox ten years before, was inoculated in one arm with recent vaccine matter, which had been dried on a lancet, and was moistened just before it was inserted. The day following not so much as a red spot of the part

inoculated was seen, nor had there been any uneasy sensation. He was therefore inoculated a second time, but with fluid lymph immediately from a patient.

The day after the second inoculation an itching sensation of the punctured part was complained of, which continued for two or three days. The part punctured had a small red elevated spot upon it the day after the inoculation, which grew gradually larger for four or five days, and became a little phlegmonic tumor, but without any red surrounding areola. In a few days the little swelling subsided, but a red and rather sore spot remained for a week longer. No disorder of the whole constitution was perceived.

6. Dr. Woodville inoculated me in one arm with vaccine lymph from a subject present. The punctured part smarted a little all the remainder of the day of the inoculation, and also the day following. In twenty-four hours a red spot on the inoculated part was seen exactly like that which is often seen in the same time when either the vaccine or variolous infection has taken effect, and which increased for another day; but after this the redness vanished, and no sore was left.

I once accidentally punctured the back of my hand with a lancet which had fluid vaccine matter upon it. The consequence was, a circumscribed, very small, red, hard tumor: this remained for a fortnight, then suppurated, and afterwards burst. The part soon healed, but left a very small superficial cicatrix.

As belonging to this head, I mention, that I have seen in, several instances, nurses with small, red, conical tumors on their lips and cheeks, and sometimes hands; evidently from the application of Cowpock matter of the children under their care during the vaccine inoculation. These little tumors sometimes remained for several weeks, and a particle of pus was formed in them: they never were attended by any fever symptoms, nor by any surrounding erythematous areola.—I here speak of nurses who had long before passed through the Smallpox.

I have no hesitation to refer the following cases, to this head of unsusceptibility of taking the Cowpox, to having previously gone through the Smallpox.

A servant of Thomas King, Esq. about 18 years of age, was brought up during his infancy under circumstances in which he could get no testimony to his having had, or *not* having had, the Smallpox. Not having undergone this disease to his own knowledge, it was thought adviseable, in order to resist the Smallpox, with which his fellow-servant was seized, to inoculate him for the Cowpox. This I did on Thursday the 23d of March, in one arm with matter on a lancet, and in the other with dried matter on a bit of thread.

4th Day, Sunday 26. The parts inoculated had smarted for the two first days, and they now were red and a little elevated, as if the infection had taken effect.

6th Day, Tuesday 28. Inflammation had almost entirely gone off: inoculated a second time in both arms with matter from a different patient.

3d Day of second Inoculation, Thursday 30. Punctured parts appeared inflamed.

6th Day, Sunday, April 2. Inflammation had disappeared. Inoculated a third time with limpid fluid matter from a patient present, and with which matter I had excited the vaccine disease in several persons.

7th Day of third Inoculation, Friday, April 7. The parts inoculated had inflamed and felt painful for two or three days, but were now well.—Inoculated him a fourth time with *Smallpox* matter in both arms. A little inflammation arose, but nothing more.

This young man frequently visited his fellow-servant in the Smallpox, and shook hands with him, at the Smallpox Hospital, while under my care for the Cowpock inoculation. In this case, either the Smallpox had already affected the constitution, or some other disposition existed, rendering it equally unsusceptible of the Smallpox and Cowpock.

From Dr. Mitchell, of Chatham, whose report is now before me, I learn, that there were several instances of soldiers to whom the Cowpock could not be communicated; and although they had no recollection themselves of having had the Smallpox, it was most probable they had passed through it. If I had seen any case of genuine Cowpock vesicle and specific fever in a constitution which had previously suffered the Smallpox, I should have related it; but I ought to mention that such a case has fallen under the observation of Dr. Woodville, (*Reports*, p. 52 and 143.) I shall never object to the testimony of so experienced a physician without more than usual consideration; but I cannot avoid here observing, that the evidence in his case, of the patient having had the Smallpox *when a child*, is merely that of the patient; and I submit to Dr. Woodville, whether or not that evidence is admissible to build upon, now that we have the above unequivocal contravening cases of the fact asserted. But I trust the Doctor will be less tenacious of this instance, as he himself tells us that he failed to excite the vaccine disease by inoculating several patients who were recovering from the natural Smallpox. (*Reports*, p. 144.)

Whatever impression the above instances may have made on my own mind, I do not think they will produce conviction in the mind of every practitioner, *that it is a law of the human animal* *œconomy to be rendered unsusceptible of the Cowpox fever and specific vesicle by undergoing the Small-pox.* Hence I find that my expectation of the hands of physic being strengthened by the possession of a sure means of exciting an innocent fever is not realised, *(Inquiry,* p. 81;) but I feel some consolation from the prospect of the new inoculation being more speedily introduced by the removal of one obstacle, viz. the fears of many persons, who have already passed through the Small-pox, that they would be liable to the Cowpox, if the diffusion of the infection of it became extensive by the vaccine inoculation. Another advantage suggested in my *Inquiry*, p. 92, is now, I think, greatly confirmed, namely, an *advantage for those who are not certain whether or not they have had the Smallpox, but possess so great a dread of this disease as not to be able to submit to inoculation for it.* I congratulate such persons on the discovery of a test to which I apprehend the most timorous minds will submit: for if the *specific vesicle* and *fever* do not take place from the inoculation of the Cowpock poison, they may be assured, that either they have already passed through the Smallpox, or that their constitutions are not susceptible of it.

It now seems to me, that the following facts are established on the ground of experience :—

I. *A constitution which has undergone the Small-pox, is unsusceptible of again undergoing this disease.*

II. *A constitution which has not undergone the Smallpox, but which has undergone the Cowpock, is unsusceptible of undergoing the Smallpox.*

III. *A constitution which has not undergone the Cowpock, but which has undergone the Smallpox, is unsusceptible of undergoing the Cowpock.*

Now, if the variolous poison destroys the susceptibility of the constitution to the future agency of this poison, in the respect of its producing the Smallpox; and if the Cowpock poison destroys the susceptibility of the constitution to the future agency of the variolous poison, in the respect of its producing the Smallpox; and if the variolous poison destroys the susceptibility of the constitution to the future agency of the vaccine poison, in the respect of its producing the Cowpock; it seems demonstrated, that the same state of unsusceptibility of the constitution, with respect to the future agency of the variolous poison, is produced equally by the agency of the variolous poison, and by the vaccine poison. But if the variolous poison produce unsusceptibility of the constitution to the future agency of the vaccine poison, and the vaccine poison produce unsusceptibility to the future agency of the variolous poison, it seems also demonstrable, that the following 4th proposition is true; viz.

IV. *A constitution which has undergone the vaccine disease, is unsusceptible of again undergoing that disease from the agency of the vaccine poison:*

because a state of unsusceptibility, with respect to the agency of the variolous poison, is produced by the vaccine poison, *(2d propos.)* and a state of unsusceptibility, with respect to the agency of the vaccine poison, is produced by the variolous poison, *(3d propos.)* but the state of the constitution being the same in the two cases, whether it be produced by the variolous or vaccine poison, with respect to unsusceptibility, it seems inevitably, in course, that unsusceptibility of the constitution to the future agency of the vaccine poison is produced by the vaccine disease: and the demonstration in course could be given of proposition 1, on the ground of the 2d and 3d *proposition*, that unsusceptibility of the constitution to the agency of the variolous poison is produced by the variolous disease, if this were not already proved by abundant experience. At a future time, however, I shall relate the observations and experiments to confirm this *à priori* conclusion; 1st, because these proofs will increase the validity of the 3d *proposition;* and 2dly, because I do not mean to offer this demonstration as infallible, like mathematical.

From the preceding reasoning it may be imagined, that I consider the Cowpock and Smallpox as only varieties of the same species of disease; and that therefore the name *variola vaccina* is appropriate, although I endeavoured to show that it was unjust, and tended to mislead, by giving erroneous notions, (*Inquiry, p.* 108). But it must here enter into our contemplation, that the same state of an animal or other substance, in a certain respect, may be produced by very different things; and the phenomena attending their agency may be very different from one another. It is so in the instances under consideration; and further, in order to establish resembling things to be *varieties of the same species*, we ought to be able to trace them to one common origin, or to show that they all agree in what should be reckoned essential properties. Now hitherto it has not appeared that the Cowpock has arisen from the Smallpox, or the Smallpox from the Cowpock. If it be said, that in some of the eruptive instances of the Cowpox, the pustles could not be distinguished from the Smallpox, it should be considered that it has not been yet shown, that in any case the Smallpox has changed into the Cowpock;—that the Cow is susceptible by inoculation of the human matter of the Cowpock, but not of the Smallpox; and that the pustules resembling the Smallpox, which occur in the Cowpock, afford matter which I believe produces in some cases (if not, perhaps, in so great a proportion as originally) the Cowpock in its usual mild way, *viz.* a vesicle in the inoculated part only, and a slight fever. Hence I humbly am of opinion, but submit the question to the decision of scholars, that the use of the denomination *variola vaccina* is a transgression of the law in philology, and repugnant to sound logic.

Extended as this paper is, much beyond the limits proposed, I cannot confine to myself the gratification from the reports of the *new inoculation.* I shall only mention, however, one or two of them. The sensation excited on the Continent, by the vaccine practice, has been much more considerable than in our own island, as I learned first from Dr. Marcet, and since by a letter from Dr. Peschier. At Vienna Dr. Ferro inoculated two of his own children with vaccine matter which I transmitted: and next, Dr. De Carro inoculated two of his own children. An accurate journal of these last cases was kept by Dr. De Carro, which he has had the complaisance to communicate to me. The above patients had the disease in the usual mild way, and were subsequently inoculated for the Smallpox, but without effect. Dr. Frank, it is expected, will adopt the vaccine inoculation; as it appears will be generally done at Vienna. I often send matter on a thread, which is to be kept for a long time, in a bottle filled with quite dry hydrogen or nitrogen gas.—I shall soon have reports from Portugal, and other parts of the Continent.

In Scotland the new inoculation has not been less successful. Dr. Anderson, of Leith, informs me he has inoculated above 80 persons—that Dr. Duncan and others have begun the practice at Edinburgh ; and that it has been introduced in Dundee, Paisley, and Dalkeith.

If the vaccine inoculation proceed with equal mildness as it has done the last four months, doubtless the variolous Insition must in no remote period be superseded. And if such an event should take place, posterity will behold with amazement the prejudices and inattention of their predecessors to the application of a fact in practice, by which a formidable and loathsome disease was extinguished—a fact well known, time immemorial, to almost every farmer in half a dozen counties of England, but neglected till *Jenner* had the courage to indicate the advantages of it to society. If I were to name a parallel instance of inattention or prejudice, it should be the neglect of inoculation for the Smallpox, till it was introduced into England from Constantinople ; although it had been practised, time immemorial, in the Barozzo mountains, on the frontiers of Gallicia, in the same rude manner as it is at this day*.

---

* This intelligence was communicated to me by a Portuguese nobleman, whose opportunities of information and accuracy authorise me to mention the fact ; but an attested account from some of the inhabitants is intended for me. See also a book written by *Jacobus à Castro Sarmento.*

It is apparent from the preceding paper, that I had through the means of Mr. Keate introduced the vaccine inoculation into the army, and a valuable report of a great number of cases had been returned from Dr. Mitchell, Mr. Kelson, Dr. Harrison, and others. I also in particular had conjointly with Mr. Keate under my direction the poor of three large parishes, amounting to several hundred, in the vaccine inoculation. Accounts had been also returned to me from Vienna and other foreign parts, likewise from Scotland. By this time I reckoned above 2000 to have undergone the vaccine pock with the matter of the London Cows, taken in January and February preceding. As the Vaccina was excited with a pock as perfectly characteristic as in the first cases from the Cow, and in all my practice three or four months immediately preceding without eruptions; and as my correspondents, with very few exceptions, sent the same statement, I was now perfectly easy in my mind with respect to the vaccine matter maintaining its efficacy in destroying the capability of taking the Smallpox. I was indeed disturbed for a short time by the fresh occurrence in the course of the winter 1799, of the eruptive cases which happened at Brighthelmstone, from matter taken out of the distinct vaccine pock of one of my patients, the original stock of which was matter taken from

Cows in January preceding. But it appeared afterwards that in these instances the Smallpox had intervened; a circumstance fully ascertained since that time.

This occurrence was in an early period of the vaccine practice, when those who first inoculated for the Cowpock did not know the characteristic symptoms of the eruption from experience; much less did they be expected to understand, that the Smallpox might take place and proceed along with the inoculated Vaccina —a thing seemingly contrary to a law of the animal œconomy. Unfortunately matter was sent from the Smallpox eruptions to Petworth for inoculation, in place of vaccine matter, and there of course it produced the Smallpox. All that could have been done by an experienced practitioner at that time was to have taken the matter from the pock of the inoculated part which shewed the distinguishing characters of the Vaccina; by which measure there is no reason to doubt the Cowpock would have been propagated without the Smallpox. This accident, however, furnished a delightful gossip's story for those who chose to represent me, and some of my friends as blameable; although in truth I had no concern in the practice, except furnishing a distinct case of Cowpock to afford matter without eruption. However unjust the motives of the propagators of this story, and in many parts false and ridiculous, it had the effect intended. I have only now to hope, that those who were deceived by this account have long since been disabused.

In the beginning of the year 1800, the Vaccine Pock Institution was established, of which I was one of the founders, and have continued to be one of the physicians. That Institution was destined not only, 1, to be useful to the poor, but it had other objects, *to wit*, 2dly, to ascertain the laws of agency of the new poison used to so beneficial a purpose as that of extinguishing the Smallpox; 3dly, to be a public office * for the supplying the world in general with matter until the disorder should be so generally propagated as to render such an institution unnecessary. These objects have been constantly kept in view, and in a great measure attained, by the regular registers preserved of the patients, according to a plan no where else adopted for so fully remarking the progress of each case. But I now mention the Vaccine Pock Institution for the sake of availing myself of it to state, that from January 1800 up to this time, August 1802, the reports of which have been registered twice every week; a thousand cases shew the Cowpock matter to produce the Vaccina without any difference in the effects from those produced in the first instance from the London Cows in January, 1799.

---

* It is the appointed office for the Army and Navy, and has served all parts of the world.

Among the earliest communications of the Vaccine Institution, was the supplying the Committee for Vaccine Inoculation at Paris with matter agreeably to the following letter addressed to me, which I thought fit, for the honour of the Institution, not to confine to myself. Hence then the introduction of vaccine inoculation into France was from this source, and not, as hath been repeatedly represented, through a different channel.

Mr. Otto's Note.

Mr. Otto, Commissary for the exchange of French prisoners, presents his compliments to Dr. Pearson, and has the pleasure to send him a letter, which has been particularly recommended to his care. Mr. Otto will be happy to take charge of Dr. Pearson's answer, whenever he will be pleased to send it to him.

George-street, Portman-square,
No. 50. March, 1800.

Letter from the Medical Committee of the Society for the Vaccine Inoculation at Paris.

Paris, le 14 Germinal, (5 Avril, 1800.

A Monsieur Pearson, médicin de l'Institut de l'Inoculation Vaccine, à Londres.

Les journeaux nous ont fait connoître, Monsieur, les essais tentés en Angleterre, relativement à l'inoculation de la vaccine, et dont les succès sont dus, en grande partie, à votre zèle éclairé. Quelques amis de l'humanité, et de la science que vous cultivez avec tant de distinction, ont formé le projet d'introduire en France, une pratique qui paroit promettre de si grands avantages. Ils ont proposé à cette effet une subscription qui est sur le point d'être remplie. Vous en trouverez ci joint le prospectus. Mais pour mettre en exécution les vuës qui y sont exposées, nous avons besoin de votre intervention, et c'est avec confiance que nous la sollicitons.

Quoique l'on ait commencé ici quelques essais sur la vaccine, dont l'ecole de médecine plus particulièrement, s'est occupée, on n'a pü cependant parvenir encore à aucun résultat positif. La difficulté de se procurer de la matière assez récente, en a sans doute été la principale cause. Nos artistes vétérinaires semblent ne point connoître cette affection sur les vaches. Dans une seule circonstance, on a cru reconnoître la maladie sur des animaux de cette espèce, et on a saisi cette occasion de recueillir du virus, qui a été employé concurrement avec de la matière reçue de Geneve et d'Angleterre, mais sans aucun succès encore bien reconnu. Nous nous trouvons donc privés du premier moyen nécessaire pour commencer nos essais, et c'est à vous que nous nous addressons pour nous le procurer.

Nous desirons, si toutes-fois vous jugez ces précautions utiles, recevoir des croutes ou pustules recueillies sur les vaches, et sur les sujets inoculés, et des fils ou des petites eponges imprégnées de la matière, prise sur les uns et les autres, de ces mêmes croutes ou pustules fraiches et de l'écoulement qui s'établit à la plaie formée par l'affection locale de la partie inoculée. Les differentes espèces de matières ou substances devront être distinguées par une indication particulière. Si votre méthode de conserver les fils dans le gaz azote ou le gaz hydrogène, vous paroit de quel qu'avantage, nous attendons de vôtre zèle, que vous voudrez bien l'employer. Nous prenons, avec notre ministre des relations extérieures, les mésures convenables, pour que les moyens d'envoi les plus surs, les plus commodes et sur tout les plus prompts, soient à votre disposition. La société ne mettra pas moins d'empressement, Monsieur, à faire connoître les services que aurez bien voulu lui rendre et à vous informer du résultat de ses recherches, dont le mérite vous sera dû en grande partie, si à l'envoi de la matière que nous vous demandons, vous avez la bonté d'ajouter quelques instructions particulières, dont nous nous feliciterons de pouvoir profiter.

Salut, Estime, et Devouement.

Les Membres composant le Comité Medical de la Société, formée à Paris, pour l'Inoculation de la Vaccine,

Pinel, Profess. de l'Ecole de Médicine.

Thouret, Directeur de l'Ecole de Médicine.

Parfait, Chir. Inoculr.

Rouselle Chamserce, Méd. de l'Armée.

Tessier, de l'Institut.

De la Porte, Med. des Hopit. Mil.

Huzard, de l'Institut.

Cabannez, de l'Institut et Prof. de l'Ecole de Med.

The precednig letter I presented to the Institution for the Vaccine Inoculation, then just established, and it was determined to execute the commission by the medical establishment. Accordingly the following letter was sent with a packet by permission of Lord Grenville*:

Letter from the Vaccine Institution to the Vaccine Committee at Paris.

In answer to your letter of the 5th of April, to our colleague, Dr. Pearson, we have the honour to reply, that we shall always be happy to assist in promoting the useful establishment for the vaccine inoculation, by the Medical Committee. We are not surprized that you have not yet found the disease among the Cows of France, it being on the whole a rare disease in England; nor are we surprized at your want of success with the matter sent to you, because from experience we know, that it very frequently fails, unless used immediately from the subject. The vaccine matter may be conveyed in various ways; we have sent it you in three, viz.

---

* Lord Grenville presents his compliments to Doctor Pearson, and has no objection to his returning any answer that he may think proper to the inclosed Papers.

Cleaveland-row, April 23d, 1800.

1st. On thread.
2d. On lancets.
3d. On glass.

1. If you use the thread; which you will find by the stiffness is well impregnated, and which is included in a phial of hydrogen gas; please to moisten it by exposure to steam of water at the time you employ it, and inoculate in two or three places under the skin as superficially as possible. This will succeed in perhaps at least *one case* out of four. We have sent enough for near 36 patients, and wish it to be used immediately on all of them.

2. The lancets are stained at the ends with the transparent lymph, and succeed more certainly than the thread; unless oxided by the moisture. Soften in like manner the ends of the lancets, with the steam of water, and use them as in the Smallpox inoculation.

3. On glass you will perceive the transparent lymph dried. Dilute it as little as possible, with hot water, just before it is used, and then insert it by lancets in the usual way.

If you try the matter sent, on thirty patients, immediately, we think you cannot fail to excite the disease in some of them, and then you will please to preserve the succession by inoculation, as we do in England, having had no fresh matter from the cow since January and February, 1799.

The treatment differs in no respect from the inoculated Smallpox.

Wishing the Committee the utmost success, and expecting the honour of their report,

We subscribe ourselves

Their obedient servants,

George Pearson, M.D. F.R.S.
Lawrence Nicholl, M.D. } Physicians.
Thomas Nelson, M.D.

Thos. Keate, Esq. F.R.S. } Consulting
John Rush, Esq. } Surgeons.

Robt. Keate, Esq.
I. Gunning, Esq. } Surgeons.
I. C. Carpue, Esq.

Augustus Brande, Esq.
Francis Rivers, Esq. } Visiting Apothecaries.
Everard Brande, Esq.

Mr. John Lewis, Resident Apothecary.

Vaccine Institution,
May 12, 1800.

The report of the inoculation, with the above sent vaccine matter, is given in the Gazette Nationale.

Gazette Nationale, Fridi, 23 Prairial, (An. 8.) de la Republique Francaise, une et indivisible.

Sur l'Inoculation de la Vaccine.

Le 13 Prairial, l'inoculation de la vaccine a eu lieu sur trente enfans, avec la matière envoyé d'Angleterre, et d'après les procédés recommandés. Des signes d'infection se sont manifestés sur neuf d'entre eux, aux époques et avec les caractères annoncés par le Docteur Pearson, et d'autres Membres du Comité institué à Londres pour l'inoculation de la vaccine. Il est à remarquer que les Médicins Anglois avoient exprimé, dans leur lettre, "que l'on "devoit se croire heureux, vu le laps des tems "entre la collection de la matière et de son ap-"plication, si, sur vingt individus inoculés, un "seul prenoit la maladie." Le 19, le 20, et le 21, dix-huit enfans; sur lesquels la premiere inoculation n'avoit point eu d'effet, ont été inoculés de nouveau avec la matière recueillie sur ceux chez qui la premiere inoculation avoit pris. Le Comité continue ses essais et instruira le public des resultats ultérieurs.

Thouret, Pour le Comité Médical.

The experiments of inoculation for the Cow-pox commenced at Paris on the 2d of June, when thirty children were inoculated with mat-

ter received from London, agreeably to the directions sent over by Dr. Pearson. The matter had been conveyed in a phial filled with hydrogen gas, stopped with mercury, and covered over with a piece of bladder. It was communicated to the greater number of the patients by the lancet, the mode to which Dr. Pearson gives the preference. Several were inoculated by raising a blister, and passing through it a thread dipped in the matter, a few by the mere external application of the matter collected at the mouth of the phial.—*Bell's Weekly Messenger, Sunday, June* 15, 1800.

In July 1800, Dr. Woodville went from London on a visit to Paris. It is said that ten of the thirty children inoculated with matter from the Vaccine Institution, on the application of Dr. Pearson, had taken the disease in May preceding, as appears from the above report, yet the generation of matter had not been kept up by a successive inoculation. Fortunately Dr. Woodville began, on his arrival in France, with inoculating three children at Boulogne, who took the vaccine disease; but at Paris with the same stock of matter he failed, as did that received, in four days time, from Geneva. However, the matter from the children at Boulogne proved efficacious on Dr. Colon's only child, inoculated by Dr. Woodville, and subsequently on many other persons during his residence at Paris.—*Monthly Magazine, October* 1800, *p.* 258, *and Medical Annals*, 1800, *p.* 476.

About the month of April, 1800, Dr. Jenner published a third essay, " A Continuation of Facts and Observations relative to the Variolæ Vaccinæ, or Cowpox ;" which however valuable on other accounts, furnishes but little addition comparatively to the cases afforded by other inoculators for determining the fact of the permanency of the efficacy of the vaccine matter ; and as this point was already determined, or at least has been so since that period, especially by the very great number of patients under the care of Dr. Woodville, and the extremely accurate registers of the Vaccine Pock Institution, I shall produce no farther evidence relative to the question just above stated.

It is necessary to represent, and this seems the fit place, that agreeably to Dr. Jenner's statement, more inflammation was to have been apprehended from the inoculated cases with the vaccine than with the Smallpox matter ; hence his recommendation of caustic and escharotic applications. Accordingly in the communications between Dr. Jenner, Dr. Woodville, and myself, on the commencement of the practice of vaccine inoculation in London, in January and

February, 1799, we all entertained apprehensions for the effects on infants; but Dr. Woodville and myself very soon ascertained that there was not the least danger in such tender subjects; and as hath been subsequently confirmed by abundance of evidence. For this important fact which promoted the new inoculation, it does not appear the public is principally indebted to the Petitioner; although in my examination by the Committee, it might be supposed that other claims were invalidated by setting forth, that *one of his inoculated cases in* 1798 *was an infant;* but, Μία χελιδὼν ἔαρ οὐ ποιεῖ.

I now respectfully submit to the judgment of the public, whether or no I was warranted in stating to the Committee, that I could not grant the Petitioner the exclusive right of having established the fact of the permanent efficacy of the vaccine poison in destroying the capability of taking the Smallpox; notwithstanding the remoteness from its origin in the Cow; after being successively generated by exciting the Vaccina in the human animal œconomy.

2. Of the evidence for "*the mode of transferring indefinitely the vaccine matter without any diminution of its specific power.*"

I must confess, although by such confession I may expose the dullness of my own intellect, that on the first reading of this part of the claim, I conceived the meaning to be, that the Petitioner had discovered that the vaccine matter maintained its efficacy against the Smallpox poison, however remotely from the Cow, it was generated by successive inoculations; but on consideration as the words quoted of the claim already examined, *to wit*, " the original inventor of the inoculation from one human being to another," would be nugatory, unless they implied what is just above stated, it appeared that the meaning, and according to which I shall examine the claim, *must relate to the selection, manner of preserving, and using the vaccine matter*. If this be not the sense intended, I own my incomprehension of it.

Looking through the evidence of the Report, I find the following testimonies to the claim as now stated for examination :—

" He believes most of the cases (said to be of Smallpox after the Cowpox) to have arisen from using matter taken at too late a period of the pustule, which may equally happen in inoculating for the Smallpox, with virus taken at an improper period of maturation." (Blane, p. 15.)—" Has known many instances of the infection not taking in the early part of his practice, owing to his using vaccine virus taken at too advanced a stage of the disease; but since he has made it a rule never to inoculate with matter after the eighth or ninth day of the disease, he has seldom met with a failure." (G. C. Jenner, p. 17.)—"Had seen arms considerably inflamed, from being inoculated with matter taken from under the vaccine scab as late as the fourteenth day; but does not know why this should be called a spurious sort of Cowpox, as they had none of the characters of the vaccine disease." (Croft, p. 20.)—Three years ago inoculated two children "with what he supposed to be true Cowpox matter; the matter for the inoculation was taken at that early period indiscriminately as long as there appeared a pustule from whence matter could be procured, he being unacquainted at that time that the Cowpox inoculation ceased to produce the disease after a certain period, which was known by Dr. Jenner, and published by him, and forms one of the important discoveries respecting the new practice: he was some time afterwards informed that these two children had the Smallpox, and upon examining their arms, there were found no scars.—This shews the importance of the period when to take matter, which difficulty was now done away, by Dr. Jenner having elucidated a subject before involved in much obscurity." Matter from a pustule a week old never failed to produce the true Cowpox; but in the afore-mentioned instance of the two children, he has great reason to believe that it was taken the fourteenth day, or later. (Thornton, p. 23.)—"Had been particularly careful in the choice of the matter employed in vaccine inoculation, and had not found in his own practice any case of spurious Smallpox, and therefore considered that the objections which are thought to arise against the vaccine inoculation from this source, apply equally often in the inoculation of Smallpox." (Addington, p. 23.)—Variolous matter was sent to him by mistake for vaccine, and it produced the Smallpox: " He has avoided these mistakes since, by taking the matter himself from the patient; and has learnt by Dr. Jenner's publication how to distinguish and select the proper time for taking it, since which no mistake of the kind above-mentioned has occurred." (Jordan, p. 25.)—" Considering the difficulties that attend the determination of the most proper time for taking the Cowpock matter for inoculation, and the exact appearances of the fluid in its more proper state, he might have acquired a considerable fortune." (Baillie, p. 35.)

Now what are we to conclude from the six preceding attestations? I apprehend the following inferences may legally be drawn from the evidence before us: 1. That if matter from a real Cowpock, but at too late a period of it, be used, it will not produce the vaccine disease by inoculation; but, 2dly, at what period we are not informed, except that one evidence confines himself to within the 8th or 9th day; another failed by using the matter at the 14th day. 3dly, Two evidences merely allege, that there is a proper time for selecting and distinguishing the matter, which they have learned from Dr. Jenner. And, 4thly, The last evidence attests the difficulty of determining the proper time for selecting the vaccine matter, in order to make appear the pecuniary advantage which might have been gained by the Petitioner.

In the investigation of the claims we must next state what appears to be the fact with respect to the effects of *vaccine matter inoculated according to the age of the Pock* *. On this point I consider the most satisfactory and clear evidence to be the register of the inoculated cases at the Vaccine Pock Institution, and the result of Dr. Woodville's practice at the Smallpox Hospital. The former source of evidence, on inspecting the written tables, containing one thousand subjects inoculated, shews

1. That there is no difference to be perceived in respect to the degree of the symptoms, or progress of the vaccina excited by matter taken on the 8th, 11th, and 12th days after inoculation; excepting that when the progress of the forma-

---

* I purposely pass by unnoticed, lest the thread of the inquiry should be broken, the terms *Cowpock pustule, variolæ vaccinæ, spurious Cowpox, imitative eruption, decomposition of matter*, &c. &c. which no one can employ with propriety, although authorized partly by usage.

tion of the Pock has been such as to produce a distinct areola of erythema, early, that is, sooner than the 9th or 10th days, and the Pock has begun to change from the vesicle state to that of scab or crusta; then in such circumstances the vaccine fluid more frequently fails to produce the *Vaccina*, than when taken at an earlier stage; but an inflammation does not appear to be more frequently excited by such less efficacious matter, than by matter in any earlier stage.

2. No difference has been manifested in the effects of the matter as taken before or after any constitutional disorder,

3. Nor is any difference perceived between the effects of matter taken before the red areola appears, and that taken when it is distinctly formed: notwithstanding "the golden rule" which has been laid down, never to use matter when such areola is distinctly formed.

4. In the few instances of obtaining matter so early as the 4th day, which occurred, the Vaccina produced, did not in any respect differ from that excited generally by matter at a later period.

To these results, which appear on the register tables, may be added the further evidence, that in the extensive communication of the Institution with the Army and Navy; for which it is the appointed office for supply of matter; as well as with practitioners in general throughout the united kingdom and foreign parts; the most satisfactory accounts have been received, where the dried matter was efficacious, without any difference as to the age of the Pock from which taken as above-mentioned. I think it perfectly relative and important to make, I believe, a new observation, *to wit,* that in truth matter of the 8th day, in some cases, is from a Pock as far advanced as in other cases on the 11th; and on the 11th as on the 14th, or even 16th. Hence as the efficacy of the matter varies, accordingly it may in one case be as efficacious or inefficacious on the 11th as on the 8th and on the 14th, or even 16th, as on the 11th.

Mr. Simons, of Manchester, as I find, very truly remarks, "There is some variety in the course of the disease, and the 9th day may in some cases be more proper for taking matter, as in others I have found the 11th and 12th to be."—Medical and Physical Journal, vol. V. p. 134.

At my request, Dr. Woodville, with his wonted liberality, favoured me with the following truly interesting letter; which must operate potently in disabusing the public from the errors of opinion on the point of the effects of matter, according to the time of taking it from the Pock.

Dear Sir,

To the following questions which you have done me the honour to propose to me, you will find my answer subjoined.

1. "Whether you find any, or what difference in the inoculation of the vaccine pock from matter taken between the 8th and 11th day?"

2d. "Between matter of the 11th and 14th?"

3d. "Between matter taken before the red areola is formed and after it?"

4th. "Between matter before and after the constitutional affection?"

In regard to the first question, I can declare that I have very frequently inoculated with vaccine matter taken on the 8th, 9th, 10th, and 11th day after the inoculation, and though I have given the utmost attention to the effects of each, I never have been able to discover any difference. Ninety-one persons were inoculated on the same morning at the hospital, with vaccine matter taken on the 11th day; upon all of whom, except three, (who did not receive the infection) it produced the regular vaccine pock. Would an equal number, inoculated with matter of the 7th or 8th day, produce a more favourable result?

Respecting the second question, I could produce several instances in which the matter taken so late as the 14th day after the inoculation, has been attended with equal success as that taken at any earlier period; however, I have been led to remark, that the virus which this late stage of the pock furnishes, is more liable to fail in communicating infection; and also, that its effects frequently proceed more slowly than those of the former.

The third and fourth questions may, in my opinion, be comprehended in one; for when the constitutional affection takes place, it constantly accompanies the areola, which rarely supervenes before the seventh, or later than the twelfth day; and, therefore, what has been said relating to your first and second questions, has anticipated my observations on the subject of your third and fourth.

It is well known to you that many cases occur in which proper matter, for inoculation, cannot be procured from the vaccine pock after the 10th day, caused either by the concretion of the fluid, or by a secondary inflammation, producing matter more or less puriform; but I never use any, unless it be perfectly limpid, and it is only to the matter in this state that the preceding observations apply.

In the printed Report of the Committee of the House of Commons, on Dr. Jenner's petition, you find Dr. B. and Mr. K. are of opinion, that what they call spurious cases of Cowpox, "*have arisen from the using of matter taken at too late a period of the pustule, which may equally happen in inoculating for the Smallpox, with virus, taken at an improper period of maturation.*" Now, Sir, I join in opinion with the last part of this citation, and with the last part only, which is, that this said spurious pustule may equally happen (or is as likely to happen,) in inoculating for the Smallpox, as for the Cowpox, with virus taken at an improper period of maturation; because I am convinced, by numerous experiments in variolous inoculation, that it never does happen. About seven years ago it was my practice at the Inoculation Hospital, for several months, to inoculate the patients alternately with variolous matter advanced to its utmost stage of maturation, and with that in its ichorous state, as soon as it could be obtained from the inoculated part, in order that the respective progress and effects of each might be daily compared; and though two or three hundred persons were inoculated with matter taken at the late and alleged improper period of maturation, it never produced any other pustules than those of the true Smallpox.

The experiments made at the Foundling-Hospital by the late Sir William Watson, may perhaps be deemed still more decisive. He informs us, (see An Account of a Series of Experiments in Inoculation, p. 17,) that he inoculated a number of children with variolous matter, in what he terms "its perfectly concocted state;" and says, "It was taken from the inside of the hand of a strong hard-skinned boy, where two or three pustules remained after the rest were dry; the matter was perfectly white, and as viscid as cream." Yet even this matter did not produce one instance of a spurious pustule, and to nine children out of ten it communicated the infection.

I trust you will judge these facts sufficient to shew the fallacy of an opinion, which would not have been noticed here, had it not been supported by authorities of the highest respectability.

I am, your's, &c.

W. Woodville.

Ely-Place, 9 July, 1802.

Now as in all the above stages of the Cowpock, it is taken for granted that the matter is in its usual state of lymph or transparent liquid; *in which state the only difference in its effects depending on the stage, or age of the Pock*, is, I apprehend, in respect to efficaciousness in exciting the *Vaccina.*

It may be asked, are there not other states of fluid in the Pock, and what are they? I answer, that in a very small proportion of instances the lymph of the Vaccine Pock becomes apparently pus, in which state only it should be called *pustule* * Concerning the effects of the *purulent* vaccine pock, or *pustule*, I have to communicate, that in the early part of the vaccine practice, when matter was frequently a rarity, this sort of it was inoculated; but it very seldom produced the Vaccina: however, when it did so, there was no difference between the disease excited by the *pustule*, and the *vesicle*; and in no instance was any mischief done, nor inconvenience felt beyond that of a large pimple.

---

* Throughout the whole printed Report, I see the term *pustule* used; but this usage is more honoured by the breach

After this representation, it perhaps will seem difficult to explain in what way the evidence above-stated should have failed to obtain efficacious matter, and wherein consists the nicety of judging of the proper time for taking it: for if the Vaccina be produced, and the Pock be suffered to go through its stages without being ruptured, or otherwise mutilated, certainly the chance of failure is mighty small; and it does not appear from satisfactory evidence, that the severe local affection which now and then arises on vaccine inoculation, depends on the age of the vesicle, or even pustule, which affords the matter*. For surely we have no

---

than the observance; and hence I call the pock containing lymph, *vesicle*, and that containing pus, *pustule*. Dr. de Carro calls it a congeries of vesicles, as appears under the magnifier.

* " I know many instances where vaccine matter has been taken from the arms of patients as late as the 11th and 12th days, when it had acquired a purulent appearance, and a brown scab had formed, which matter has been inserted into

right to talk of nicety and difficulty in the new inoculation, seeing there is no fact more commonly known than that the matter of a variolous pustule at a late period, *to wit*, that of desiccation in forming a crust, is usually inefficacious, and is accordingly only used from necessity. But it will be said, there must be something left unexplained if my statement be exact, otherwise one of the evidences in particular was too judicious to have delivered his opinion in the terms above cited. I own on the first reflection I conjectured that he was warped (perhaps honourably so) by the pecuniary objects of the Petitioner; but on further consideration, I saw clearly in what way, as I think, he had been misled; for he had " not seen many cases of Cowpox," and those only " *to become acquainted with the ap-*

---

the arms of children, in whom it has produced a very mild disease, and from whence fluid matter has been taken to inoculate others, who have also had the disease equally mild. It will be difficult to reconcile these facts, which are attested, not only by my own experience, but by that of some very respectable surgeons in this place, with the opinions advanced that matter taken at so late a period loses, by degenerating, the power of producing the disease." Letter of Mr. Maddock, Nottingham, Jan. 1, 1801.—In the same letter Mr. Maddock adds, that matter of the 8th day produced a violent inflammation with the Vaccina; that in another case, 9th day matter of a mild case produced a still more severe affection; but the matter of this case of 9th day, when much inflamed, being inoculated produced in two patients a slight disease.

pearance and process of the Cowpox pustule." So then the opinion, " that considering the difficulties that attend the determination of the most proper time for taking the Cowpox matter for inoculation, and the exact appearances of the fluid in its more proper state, he might have acquired a considerable fortune ;" I say this opinion was not founded on *autoptical evidence*, (no, I dare be sworn it was not) further than observing the progress of the Pock in the inoculated part. Now if Dr. B. will, for our mutual instruction, meet me at the Vaccine Pock Institution on Tuesdays and Fridays for a few weeks, in his presence, from cases which he will own to be those of vaccine pock, matter shall be inoculated in the usual way of the Smallpox, from the earliest stages of the manifestation of fluid in the Cowpock, to the latest stage in which fluid can be collected at all; the progress being the ordinary one ; and if any difference can be perceived in the effects on inoculation connected with the presence or absence of erythema, or of fever, &c. except as aforesaid, the more frequent failure to produce the disease from a Pock very far advanced into the stage of crust * ; the witnesses being two common friends, (and better we cannot have than my colleagues at the Institution, Dr. Nihell and Dr. Nelson) I will publish a renunciation, as the victorious party may please to direct.

---

* I cannot persuade myself that any Inoculator, possessed of common sense, would use such old matter in the Smallpox inoculation but from necessity, nor therefore in the Vaccina ; but if he were, I do not think the opinion of many persons well founded as to the ill effects.

It may seem that I have taken an unjustifiable liberty in thus animadverting on this evidence; but I particularly notice it, 1st, from motives of respect; for as even erroneous opinions are harmless, unless of persons who have an influence on the public mind, it would be ill-spent time to examine them, however serviceable to the authors. 2d, If I obtain the assent of this evidence, I shall anticipate a victory over the rest.

——————Si Pergama dextrâ
Defendi possent, etiam hâc defensa fuissent.

As I have already noticed, the attestations are not inserted in the order of time in which received; hence the one under remark is the last in the Report, although one of the earliest delivered; and as it seems purposely stationed in the rear, I think very fairly so, in order that the final impression should operate powerfully in favour of the Petitioner's claims; but on that account I think it equally fair to bestow on it a particular examination.

It still remains to examine the support of the claim represented by the Honourable Committee, consisting in the declaration of two evidences;

that *there is a proper time for selecting and distinguishing matter, which they have learned from Dr. Jenner's writings**. Here is an appeal then to the published source of information, which it is incumbent upon me to investigate.

1. In the work above-cited of the Petitioner, published in June, 1798; in the account of the *four* cases of inoculation from human subject to human subject, (Inquiry, p. 44,) not a syllable can I find concerning the day on which matter should be taken, the presence of areola, nor any cautions; and the description of the Pock is such, that so far from instructing us to distinguish it from other Pocks, it would rather mislead. Of the Pock it is said, "the pustules so much resembled on the 12th day those ap-

---

* In December, 1800, (Med. Journal, p. 488,) some unfortunate cases of inoculated Vaccina occurred, which were imputed by the medical gentlemen who investigated them, to *the lateness of the period at which the inserted matter was taken*, and on the authority of the Petitioner, they directed matter to be taken not later than the 9th day, and the fluid to be transparent. In January, 1801, (Med. and Phys. Journal, p. 87,) I stated to the public many facts of inoculation, to shew that these conclusions were not founded on experience, and were hurtful to the public. No contrary evidence has been subsequently given *from experience;* but the assertion has subsequently been repeatedly made on the above authority, as well as by himself, to persuade the public of the vast importance of taking matter before the 9th day, and above all before any extensive areola or "efflorescence" appears.

pearing from the insertion of variolous matter, that an experienced Inoculator would scarcely have discovered a shade of difference at that period. Experience now tells me, that almost the only variation which follows, consists in the *pustulous fluids* remaining limpid nearly to the time of its total disappearance; and not as in the distinct Smallpox becoming purulent (Inquiry, p. 44.)—Which (the Cowpock) bears so strong a resemblance to the Smallpox, that I think it highly probable it may be the source of that disease (Inquiry 1798, p. 2.)—Again to the same purpose (Inquiry, p. 37.)—I do not cite and refer to the above passages for any other purpose but to shew, that at this early period of the new inoculation, even the characteristic differences between the Smallpox and the Cowpock, with respect to figure, and above all the *kind of scab*, were not then observed by the author; nor does he even notice the age of the Pocks in the plates, so that it is not surprizing he gives no information concerning the selection of matter.

2. The next work of Dr. Jenner, ("Further Observations on the Variolæ Vaccinæ,") appeared in April or May, 1799; and by this time, as hath been already stated, the number of vaccine inoculated cases had been increased from seven or eight to several hundred, without any

accidents happening; except the appearance of variolous eruptions during the Vaccina, in situations where there was, or had been the Smallpox; and no nicety nor difficulty was experienced in the selection of matter, and continuing to propagate the disease by inoculation, but such as were in course dictated by the inoculation for the Smallpox. But I had heard of objections and difficulties to encounter from, 1. the frequent failure of the vaccine matter when sent to a distance from town, and used after being dried. The fact is, that dried vaccine matter is naturally less efficacious than dried variolous matter. There is no just pretence for imputation of ignorance or inaccuracy, merely because vaccine matter sent to distant parts from whence taken fails to produce the Cowpock; nor on the other hand any right to impute to peculiar knowledge the efficacy of matter in such circumstances. The very first parcel of matter which was sent by me to Vienna, and also to Paris, produced the Vaccina; but that sent to the Cape of Good Hope, and the West Indies failed. The matter sent by Dr. Jenner to Dr. Odier of Geneva, produced according to Husson (Recherches Sur la Vaccine, 1801, p. 98,) "the *Spurious Cowpock*."—2. There were accounts of persons taking the Smallpox who had been said to have undergone the inoculated Cowpock.—3. A few instances were reported of alarming inflammation of the inoculated arm. It did not appear to me then, and has not appeared since, that any thing was necessary but knowledge of the characters which distinguish the Cowpock from every other eruption, more especially from the Smallpox, with which it was confounded by Dr. Jenner; but between which eruptions the practice in London first made the necessary discriminations: for the *circular figure*, the *smooth surface*, the *less pointed shape*, and the *peculiar scab*, were first noticed as peculiar to the Cowpock by Dr. Woodville and myself. This representation is necessary, because these distinctions are, I apprehend, fundamentally requisite to be known for the propagation of the Vaccina; which, however, we do not find in this second Treatise of the Petitioner, any more than in the former.

This is the proper place for inserting the original observations of the characteristic properties of the inoculated vaccine pock, the importance of which seems to have very generally escaped observers, and the understanding of which, in the early part of the practice, *to wit* in 1799 and 1800, would, I think, have prevented most of the mistakes committed, and the failures in exciting the Vaccina by inoculation. The acuteness of Dr. Woodville, and the obligations of the public to him, will be fairly appreciated by considering that he was led to expect, from Dr. Jenner's account, a quite differently appearing pock, from what, I suppose, all the world now knows to be the fact; yet, for the first time, I believe, is Dr. Woodville's claim to this fundamental discovery now asserted, although, on the knowledge of the discriminating characters of the vaccine pock depends the right judgment of the vaccine disorder; but which, it must be owned, cannot be justly conceived, without repeated exercise of the eye, in watching the progress of the pock, from its rise, through its different stages, to the formation of the scab; and, finally, separation, leaving a scar never, during life, to be obliterated.

The general character of the tumour, from the inoculation of the Smallpox, is very different from that of the Cowpox; and though "on the same day a person be inoculated in one arm with the matter of the Cowpock, and in the other with that of the Smallpox, yet both tumours preserve their respective characteristic appearances throughout the whole course of the disease. This is certainly a strong proof that the two diseases, in respect to their local action, continue separate and distinct."—Woodville's Reports, p. 140, 8vo. May 1799.

"The local tumour excited by the inoculation of the Cowpox, is commonly of a different appearance from that which is the con sequence of inoculation with variolous matter; for if the inoculation be performed by a simple puncture, the consequent tumour, in the proportion of three times out of four, or more, assumes a *form completely circular, and it continues circumscribed, with its edges elevated and well defined, and its surface flat throughout every stage of the disease; while that which is produced from variolous matter, either preserves a pustular form, or spreads along the skin, and becomes angulated and irregular, or disfigured by numerous vesicles.*"

"Another distinction still more general and decisive is to be drawn from the contents of the Cowpox tumour; for the fluid it forms, unless from some accidental circumstance, *very rarely becomes puriform*, and the scab which succeeds is of *a harder texture, exhibits a smoother surface, and differs in its colour from that which is formed by the concretion of pus.*"—Woodville's Reports, 8vo. p. 146, published May 1799.

These characters of the Cowpock, *to wit*, circumscribed circular elevated eruption, surrounded by a red halo or efflorescence; smooth surface; brown, black, or mahogany and tamarind stone coloured long adhering scab; are repeatedly noticed in the detail of particular cases by Dr. Woodville, in his Reports of 1799, pages 38, 39, 40, 41, and 56.

Dr. Woodville's characteristic marks belonging to the Cowpock, seem now so plain to be understood and distinct, that one cannot but wonder that they should have escaped, above all, Dr. Jenner's notice, who was so much interested in propagating the real Vaccina; yet we find him writing a second Treatise in the summer 1799, and a third in the spring 1800, without making any use of these phænomena to prevent mistakes, while he labours to shew how to avoid error, by enumerating several sources of what he calls spurious Cowpox; I will not say wholly uselessly, but certain I am the end would have been attained more certainly, by a description of the Cowpock as it appears in nature, and not its resembling exactly the Smallpox, according to Dr. Jenner.

I took for granted that the above description and observations would render any farther account unnecessary; and therefore, although my observations were as early, I did not publish them distinctly; but decisive indications may be referred to that I did make them, from the following lines:—

"I will not allow that any person's evidence is much to be depended upon for this point, unless he really know what are the characters of the Cowpock eruption, and what are those of the variolous."—Philos. Mag. April 1799, and other Journals.

"Of course the pustule, in the inoculated part, is very different from that of the vaccine pock."—Philos. Mag. Jan^{y}. 1800.

" In some instances these eruptions have occurred, although the inoculated part exhibited the genuine vaccine pustule."—Ibid.

" This last case was probably that which, Mr. Keate informs me, had, in the inoculated part, the genuine vaccine eruption, (vesicle,) but in all others, Mr. Barret observed, that, in the inoculated part, the pustule was ragged at the edges and flat, more resembling the variolous pustule."—Ibid.

" We must consider the two poisons, as of distinctly different species, on account of the different characters of the eruption in the Smallpox and Cowpox."—Ibid.

" The permanent nature of the vaccine poison appears now fully determined; for it seems fair to calculate, that at least 5000 persons have been inoculated with the matter originally taken in January and February 1799, by Dr. Woodville and myself, from the Cows in Grays-inn-lane; and by myself exclusively, from Mr. Willan's Cows, in Mary-le-bone fields; and yet the characters of the inoculated Cowpock are the same now, that they were in the first instances, directly from the animal."—March 1800, Med. and Phys. Journal.

To return to the examination of Dr. Jenner's second treatise; the author hearing of persons having taken the Smallpox who were said to have undergone the Cowpox in the casual way, it seems he was incited to treat of what he called *Spurious Cowpox*; and the observations relative to it, have been quoted as serving to elucidate what was said to be "mysterious," and to enable practitioners to select proper matter for inoculating the Vaccina. Notwithstanding these commendations I with confidence expect that Mr. Aiken, who has written so usefully popular a work on the Cowpock, will judge differently concerning the pretended spurious Vaccina; after due consideration of what I have here written. And I make the same remark on the elegant book of Dr. Thornton, lately published on the same subject.

To judge how far facts bear upon the claim of the "mode of transferring, indefinitely, the vaccine matter, without any diminution of its specific power, to which no other person has alleged a title," the necessary extracts must be brought forward.

The sources of the Spurious Cowpox are,

1. "Pustules on the nipples or udder of the Cow, which pustules contain no specific virus."

2. "Matter (originally possessing the specific virus,) which has suffered a decomposition, either from putrefaction, or from any other cause less obvious to the senses."

3. "Matter from an ulcer in an advanced stage, which ulcer arose from a true Cowpock."

4. "Matter produced on the human skin,

from contact with some peculiar matter generated by a horse."

I cannot conceive how these observations relate to the discovery of selecting proper matter, further than in the first instance, in taking it from the brute animal; but surely these cautions, which are not necessary to an intelligent Inoculator of Smallpox, cannot be offered as pretensions to discovery; yet it is curious to find, that the author, as he proceeds, notices, for the first time, as far as I perceive, the only way in which the inoculation can be practised securely, *to wit.* " by first learning how to distinguish, with accuracy, between that peculiar pustule, which is the true Cowpock, and that which is Spurious;" or, as I would prefer to say, *between that which is the Cowpock, and the eruptions which are not.*

The terms Spurious Cowpock, to my conception, either convey an erroneous notion, or have no definite meaning; for I am unable to perceive that they can mean any thing but a particular and specific disease, or else they mean any local affection whatever, produced by inoculating animal matter or other substances, or by the mere puncture. Now, first, a specific local affection, which is characterised by a distinguishing set of appearances, occasioned by animal matters of the kinds alluded to, has not, as far as I know, fallen under observation and description. 2d. The local affections, produced by so many different kinds of animal, or other extraneous matter, or by mere punctures, not yet discriminated by specific phænomena cannot have notions of them excited by the words Spurious Cowpock, because their just import is what is defined in the mind. Here there is a gross violation of the laws of Philology, well calculated for producing confusion, mistakes, and disputes. According to this representation, then, in order to disabuse the public from the errors of the terms Spurious Cowpock, it appears to me we should substitute the phrase, local affection not having the distinguishing characters of the Cowpock, and excited by an agent intended to produce the Cowpock.

Hence I hope these remarks may serve to explode the misleading terms *Spurious Cowpox*, and introduce a precise meaning in the place of an indeterminate one. I entirely agree with the author, that to avoid error, from using unfit matter, " the first object should be to learn the distinguishing properties of the Cowpock: until experience has determined this, we view our object through a mist."—(p. 9.)

" Let us suppose that the Smallpox and Chickenpox were at the same time to spread among the inhabitants of a country which had never been visited by *either of those distempers*; and where they were quite unknown before; what confusion would arise! The patient who had gone through the Chickenpox to any extent would feel equally easy with regard to his future security from the Smallpox, as the person who had actually passed through that disease. *Time and future observation would draw the line of distinction: so I presume it will be with the Cowpox.* Until it is more generally understood, "all cavilling on the mere report of those who tell us they have had the Cowpox, and are afterwards found to be susceptible of the Smallpox, should be suspended."

If the author was impressed with the importance of ascertaining these distinguishing properties, one would have expected from him a description of them in his very *first* publication, which, though less splendid, would have been infinitely more useful than the plates given in that work; or indeed they seemed especially the less useful, as the vaccine pocks were said to resemble the Smallpox "so exactly, that an experienced inoculator could not distinguish them from one another."

I desire to be understood as by no means disallowing the usefulness of delineations of eruptions on plates: I only mean to speak comparatively in affirming, that a good verbal description without plates, is more valuable than the best likenesses without a description. Unfortunately for the public, the author not only, as it seems, was unable to give a verbal description of the characters of the Cowpock, as it appears from inoculation, owing to the paucity of instances (about seven cases only having fallen under his observation) when he published his work in 1798; but the unlucky oversight of not contrasting the drawing of the Smallpox with that of the Cowpock; and the omitting to delineate by the drawing even the Cowpock in its principal different stages; rendered the plates in his work quite inadequate to the exciting a just notion of this eruption. The effect of such a contrast is manifest from the inspection of the subjoined plate: a similar representation in the work on the Variolæ Vaccinæ in 1798, especially if accompanied by a description, would have greatly accelerated the progress of knowledge of the Vaccina, and prevented many mistakes in the new inoculation. That the author should have continued in subsequent editions of his publication to have given no further distinctions; but repeated the assertion of the similarity of the inoculated vaccine pock to the Smallpox, is to me a procedure utterly inexplicable.

The author ought therefore, perhaps, to have been less urgent in his complaints of the errors committed in the practice of the new inoculation, since practitioners furnished with vaccine matter by Dr. Woodville and myself* exclusively for some time were at sea without a compass—they had indeed the comparison with Smallpox, but that served to mislead. Hence in vain we search in the author's second work now before us for the distinctions between the * vaccine

---

* To remove all doubt, and repel the insinuations that the matter first employed, in 1799, by Dr. Woodville and myself,

---

and distributed by me, was not real Cowpock matter, it will be sufficient to appeal to the Reports printed in the public Medical and Philosophical Journals in the years 1799 and 1800. As an example, I cite the following: "The vaccine virus which I received from Mr. Addington, was originally sent to him by Dr. Pearson, of St. George's Hospital. On the 8th June, I used that sent me by Dr. Jenner. I used no other during the remainder of my practice. The appearance of an eruption on the two first patients surprized me greatly, as well as those subsequently inoculated; and after I was favoured with vaccine virus by Dr. Jenner, I was convinced from the exact similarity of the effects, that what I had received from Mr. Addington was genuine."—Evan's Letter, Med. and Phys. Journal, vol. II. p. 312.

* It is very extraordinary, that even at the time of the second publication the author should not have noticed the distinguishing properties between the Cowpock and Smallpox; yet at p. 30, he says, the inoculated Cowpock so much resembles the Smallpox, that a surgeon declared he could not perceive the difference: nay, in the daily reports of the cases of inoculated Cowpock, the pock is not seen to differ from the Smallpox in *figure, milky whiteness, areola,* or *scab*; which were certainly distinctly remarked at that time in London. See p. 30, 31.—And it is hardly credible, that at the close of this publication, p. 57, 58, in detailing two cases further, the author speaks of them as resembling the Smallpox. In 18 cases by Mr. Hickes, p. 59, in the infant 20 hours old, p. 62, and another, p. 63, no account is given of the cha-

pock, variolous, and other eruptions: to whom the public is indebted for these, has been above related.

On the point of the claim, *preserving matter*, we are informed that "Cowpox matter" has been kept possessing all its specific properties for three months, "by drying it in the open air on some compact body, as a quill or a piece of glass, and afterwards securing it in a small phial." But by keeping it moist and warm, the matter cannot be depended upon for producing a *perfect* disease, although it may produce a resembling one—that the first-formed virus, or what constitutes the true Cowpock pustule, invariably possesses the power he has ascribed to it, namely, that of destroying the susceptibility to the Smallpox—that when the vaccine pustule becomes an ulcer, *(to which state it is often disposed to pass, unless timely checked)* the matter is suspected of possessing very different properties, so as to produce an ulcer in a sore, and excite a constitutional affection, "*imitating*" the genuine Cowpox.—At page 42, the author acknowledges he does not yet know at what stage the matter of the Cowpock loses its specific power, for which reason all that had hitherto been inoculated ought to submit to variolous inoculation.—P. 42, 43.

racteristic properties of the Cowpock. Nor in any of these cases is mention made of the day after inoculation at which the matter was taken.

In the course of the summer and winter, 1799, and the whole year 1800, in the public Journals, references will be found to my letters, stating that the vaccine matter is efficacious commonly between the 8th and 11th day, but that later it often fails; and that when the *vesicle* becomes a *pustule*, it cannot be depended upon. This direction appears to me at this time all that is requisite, and the mystery about taking and not taking matter with certain appearances of the areola, or halo around the Pock, and the particular day or sooner than the 9th, I am sure are all ill-founded, and therefore hurtful cautions.

But I only mean these as general rules; for, as hath been before observed, matter may be as efficacious in one case on the 6th or 7th, as in another on the 8th or 9th, and in another on the 11th and 12th, as at any former period. There is no direction wanted according to my experience with respect to taking matter, but what is commonly understood in the variolous inoculation. It is not the time after inoculation which should constantly determine the choice of matter so much as the state of the vaccine pock; nor can the selection of matter prevent the deceptions and mistakes in practice of persons being supposed to have gone through the Vaccina who had a local affection from inoculation of a different kind. It is the knowledge of the characters of the vaccine pock, which is the best guide, and has never failed in my experience to direct me without meeting a single disappointment. How the selection of matter without this knowledge can secure from error, I am unable to comprehend. As a proof that I was not unmindful in my extensive correspondence, when I first disseminated the vaccine matter, to remind the Inoculator, that it should, as in the Smallpox, not be taken in too advanced a stage, or when some adventitious change had taken place, I shall extract a few lines from the communication of Dr. Huggan, one of the early able promoters of the new inoculation. " Dr. P. directs, that the matter be not taken if it *be purulent*, as it cannot be depended upon—That the matter may be preserved without losing its active properties, it should be kept in a phial quite dry, and closely stopped, or in hydrogen or nitrogen gas, as Dr. P. recommends. The matter is in an efficacious state from the 8th to the 11th day generally. Med. and Phys. Journal, April 1800, p. 347.—As a proof that judidicious Inoculators in course avoided the matter after the 11th day generally, I quote Dr. Stromeyer's letter, Hanover, March 24, 1800: " After the 11th day I have hitherto desisted to repeat collecting more matter, yet I wish to know how long it might be continued."

But still we have not exhausted the search into the sources of information from the author's works, for the "selecting and distinguishing" fit matter exclusively imputed to him as a discovery, because the third essay entitled, "A Continuation of Facts and Observations relative to the Variolæ Vaccinæ, &c. by Edward Jenner, M.D. &c. published April 1800, is yet unexamined.

The first observation I find in this treatise relative to the object of inquiry, is occasioned by the unexpected appearance of variolous-like eruption alone with the Vaccine disease in the Smallpox Hospital, to avoid which eruptions, Dr. Woodville, by experience, was taught to select matter from cases *without eruptions, and with well characterised Cowpock;* in consequence of which precaution, Dr. W. says the disease became milder, with a much smaller proportion of eruptive cases. He concludes, that the Cowpox, from certain circumstances, is not only liable to lose the characters which distinguish it from the Smallpox, but also to continue to propagate itself under this new and casual modification. *The Vaccinæ Variolæ and the Human Variolæ ought therefore to be considered as only varieties of the same disease, rather than as distinct species.* (Woodville's Reports, &c. 8vo. p. 153, published May 1799.)—Dr. Jenner, in the treatise before us, rejects the above inference, alleging, that "the decline, and finally the total extinction nearly of these pustules, are more fairly attributed to the Cowpox virus, assimilating the variolous, the former being probably the original, the latter the same disease under a peculiar and at present an inexplicable modification." Farther: the author observes, that in his former work he was of opinion that the Smallpox and the Cowpox were the same disease under different modifications.

These observations are relative in this place to show that neither of these authors came near the truth in their conjectures; and according to these conjectures, they could not with certainty explain how to select pure vaccine matter. It is no imputation that both conjectured erroneously, for then the new inoculation did not furnish sufficient evidence to manifest what may be considered as either a new law, (more truly two new laws), or an exception to a law of the animal œconomy, *to wit,* that two different species of morbific poisons, the variolous and vaccine, can produce their specific effects at the same time in the same constitution, and in a mode unthought of, as well as contrary to the established laws of agency of the variolous poison. If this new law had been understood at the time of these publications, it would have been known that matter taken from a vaccine pock in the inoculated part, attended by the Smallpox, would produce singly and distinctly the Vaccina on Inoculation, as well as the matter of the attending variolous eruptions would produce fairly and distinctly the Smallpox on Inoculation: also that the Cowpock can never become Smallpox, nor the Smallpox change into Cowpock; nor the poison of the one disease be destroyed (assimilated as above cited) by the other; nor does it appear that the Vaccine Poison differs in its properties according to its production by the Cows in London, in the provincial farms of any part of England, in Ireland, in Italy, and in America. The misrepresentation of Dr. Jenner, from no doubt inadvertency, which Dr. Woodville alleges against him respecting the effects of matter on incoculation, was in reality taken at the Smallpox Hospital, but stated to have been obtained from Mr. Clark's Cow, is one of the proofs of what I have above asserted at p. 113, *Note.*—(Observations on Cowpox, by Woodville, 8vo. 1800, p. 9.)

I have met with a few further observations of the author, concerning the "choice of matter," or which are asserted on his recommendation. "It should not be taken later than the 9th day." Med. and Phys. Journal. (Vol. iv. p. 489.) —"Dr. J. never uses any matter that is not taken before the areola is fully formed. When taken later it is not to be depended upon as a preventive of Smallpox, although it will produce a disease imitative of the true vaccine."—(Vol. vi. p. 121.)—"A correspondent, under the signature M, as I think, very justly remarks," ' that, in a sufficient number of cases, he has not been able to remark any difference in the appearances of the pock, from matter after the full formation of the areola, and those accounted of the genuine vaccine."—(Ibid. p. 218.)—But another correspondent, (Ibid. p. 326.) on the authority of Dr. J. replies, that it is fully ascertained that at a certain indetermined period, but always a late one, the Cowpock, "virus," "is capable of producing morbid and phagedænic ulceration, considerable erysipelatous inflammation, and a train of effects wholly dissimilar to those of pure and recently formed virus*."

---

* It is truly grievous to read, and humiliating to reflect on the conduct of men who either become partizans of personal interests, and whose reasoning becomes warped by such interests; or who, independent of prejudice, can reason oppositely on the same facts, to men esteemed generally to judge with justice. So it has happened where it was proved,

1. That mischief which was imputed to virulent matter after the areola was formed, *namely*, of the 12th day, was not occasioned by the age of the vesicle, because matter from the same vesicle at a later period produed the mildest Vaccina; and because in other cases experiments purposely made, shewed the Vaccina excited by matter from a vesicle on the 8th day, or sooner, (when it can be had) is not milder than that from matter of a vesicle on the 11th day or 12th day.

2. Where there was no proof of the matter being purulent, or if it had been so, that there were any facts to show such matter was the cause of excessive inflammation and ulceration,

Hence matter, not later than the 8th or 9th day, should be used; and, provided the progress be regular, " *no alteration in its qualities can occur.*"

To these affirmations I add one more on the same side of the question, from a paper of

---

3. Although extensive experience in the hands of able practitioners has shown that escharotics and caustics are not wanted; nor is admissible evidence in the general estimation of such men yet produced, although the practice is urged.

4. Although all the world knows it is imprudent to make numerous and deep incisions—to mix different animal fluids in practising inoculation, even healthy ones—that puncturing or cutting a pustule surrounded by inflammation, especially with a rusty instrument, or one armed with some morbid matter, is liable to do mischief: I say, notwithstanding these facts, we find some authors imputing unfavourable consequences to other agents, against the evidence of such facts, and referring to Dr. Jenner's book for directions, which either are not contained in it, or which belong in common to the inoculation of the Smallpox and of the Vaccina. This is not all; we find connected with these strictures a censure, on those who by their zeal supported the vaccine inoculation, for mistaking the Smallpox matter for the Cowpock, which is without proof; but if admitted, would only justly prove, that for want of a description of the characters of the Cowpock instead of plates; and on account of the Cowpock being said to be exactly like the Smallpox in the first instance, such mistakes had been made.

To crown all; we find persons without pretensions from a studious life, and who have had little experience, charge men who have consumed not a short life wholly in practice and contemplation, with gross ignorance, merely because they have been guilty of the misdemeanour of stating facts, and differing in opinion from their authority.

"instruction," signed Ed. Jenner; the date I know not, but think it was printed in 1801.— "Let the vaccine fluid be taken, for inoculation, from a *pustule* that is making its progress regularly, and which possesses the true vaccine character, on any day from the fifth to the eighth, or even *a day or two later, provided the efflorescence be not then formed around it.*" The author adds, "the vaccine fluid is liable to undergo a decomposition." This decomposition is proved by its producing a "spurious pustule," *i. e.* in such a state a *change* has been produced in the matter; but that the change consists in *decomposition*, is the mere coinage of fancy, and with equal right I would affirm it consists in *composition*. But the assertion of decomposition, and the use of the term, *Spurious Cowpock*, I cannot avoid saying, in spite of my wish to abstain from criticism, are unworthy of sound judgment.

The rule of not taking matter, is not allowed to be founded in experience on the other side of the Atlantic, any more than in this country: as Dr. Currie, of Philadelphia, observes, in a written note to p. 13 of his Letters, on the Kine-pox, &c. sent to me, July 1802. "Dr. J. says, the fluid should never be taken from the vesicle after the areola is completely formed. I have, however, taken it till the areola began to fade, and have produced the disease in its genuine form, with equal certainty as when taken at an earlier period. And the matter that succeeded in communicating and propagating the disease at Norfolk, was taken by Dr. Balfour, from a patient in Philadelphia, on the 10th day, when the areola was completely formed."

I think it advisable to be on the safe side, and, therefore, to be attentive to the mode of inoculation, to the quantity, and to the kind of matter; yet I believe, that, in at least nine cases out of ten, when violent inflammation, gangrene, and death ensue from a puncture or cut, although animal matter be at the same time applied, or some other extraneous matter, it is the peculiar state of the constitution, and not the matter applied, nor the kind of cut or puncture, which is the occasion of those serious consequences. Because, 1. Such consequences take place from puncture or incision, by a perfectly clean steel instrument. 2. From fresh animal matter applied to the cut. 3. Because no such consequences take place in general, although even the matter of many kinds of ulcers, and animal morbid poisons be introduced.

The late I. H. M. pricked his thumb with a thorn. Inflammation and gangrene came on, which killed him. M. C. punctured one arm with a lancet which had a little blood upon it. Inflammation of the punctured part, redness, with hardness and swelling of the lymphatic vessels, first took place; then suppuration and swelling of the axilla of the arm wounded. He recovered.

In dissecting dead bodies Students very often have inflammations, swelled lymphatics, swelling of the axillary glands, suppuration, &c. merely from a cut with a clean knife or needle, as well as when animal matter is introduced.

A woman pricked the end of her thumb with a splintered bone of mutton. Inflammation came on, with vesicles, which proved fatal in ten days time.—London Med. Review, Sept. 1798.

The following direction is all we have found necessary in practice, and which is among the *printed directions of the Vaccine Pock Institution*, long before the preceding author informed the public in the same way. "For inoculation matter may be taken between the 7th and 13th days, *generally*; but *probably* it is most efficacious, and is in greatest quantity on the 9th and 10th days." To judge of the proper kind of pock from which matter is to be taken, the following information is given by the Institution: 'If the infection take, there will be seen in the inoculated part, in four days or less, a red spot, like a small gnat bite; in six days there will be generally a very small vesicle; in nine days a *circular vesicle* appears, as large as a pea, often surrounded by a small red areola; in twelve days the red areola will generally surround the vesicle, which then begins to dry and turn black in the middle; between the 8th and 11th day a slight fever often takes place; by the 14th day the vesicle is usually changed into a circular dark brown scab, which should by no means be removed, but left to fall off, which it will do in two or three weeks, leaving a pit." I hope the Institution will not suffer much by the comparisons with Dr. J's. information in his printed instructions, as follows: "A little spot will appear on the punctured part on the *third* day, if the operation succeed, which on the fourth or fifth becomes perceptibly vesicated. It goes on increasing till the tenth day, when it is generally surrounded by a rose-coloured efflorescence, which remains nearly stationary for a day or two. The efflorescence then fades away, and the pustule is gradually converted into a hard glossy scab of a dark grey colour. These progressive stages of the pustule are commonly completed in sixteen or seventeen days."

To this place belong the observations of the author, on the preservation of vaccine matter: "Various methods have been proposed, but, from the test of long experience, it may be asserted, that preserving it between two plates of glass is the most eligible. Let a piece of common window glass be cut into squares, of about an inch each, so that they shall lie smooth when placed upon each other. Let the collected vaccine fluid be confined to a small space, (about the size of a split pea) upon the centre of one of these glasses, which should be suffered to dry in the common heat of the atmosphere, without exposure to the heat of fire, or of the sun. When dry, it should be immediately secured, by placing over it the other piece of glass. Nothing more is necessary for its preservation than wrapping it in clean writing paper.—*Instructions* above cited. In this way we are told " it may be sent to China, and *never* fail to communicate the disease."

I have thus carefully collected all the observations I could find of the Petitioner's, which I supposed afforded any sort of evidence for the claim asserted by the Honourable Committee in such emphatic terms, *to wit.* " The mode of transferring indefinitely the vaccine matter without any diminution of its specific power, to which it does not appear that any person has ever alleged a title." And these observations include all I could find relative *to the proper selection and distinction of matter for inoculation*, stated in the Report, by two or three evidences, to have been learned from the Petitioner's writings.

I now refer to competent judges the following questions, which I trust may be fairly proposed:

1. Whether or no the Petitioner's direction, concerning the time of selecting matter, are not

according to unproved facts, or, indeed, are against ascertained facts; and if so, whether, by thus introducing error, the progress in the history of the Vaccina has not been impeded?

2. Whether the introduction of the term Spurious Cowpock, for considerations above stated, is not productive of mistake and false notions?

3. Whether the pointing out the sources of animal matter, which, on inoculation, would produce what was called Spurious Cowpock, is not nugatory, in case the discriminating characters of the Cowpock had been described; and as undescribed, the account of these sources would not be adequate to the intention of preventing mistakes into which any intelligent Practiser would ever fall.

4. Whether some of the effects, imputed to the sources of Spurious Cowpock, are as I affirm, from most extensive experience, merely imaginary, or at most but varieties. Such as "when the Cowpock pustule has degenerated into an ulcer, (to which state it is often disposed to pass, unless timely checked,) I suspect the matter, possessing very different properties may sooner or later be produced; and although it may have passed that stage wherein the specific properties of the matter secreted are no longer present in it; yet, when applied to a sore, (as in the casual way,) it might dispose

that sore to ulceration, and from its irritation the system would probably become affected; and thus, by assuming some of its strongest characters, it would *imitate* the genuine Cow-pox.—(Jenner, Further Observations, p. 7.) On the rock of experience, 1, I must contradict the assertion of the proneness of Cow-pock to degenerate into ulcer. 2. I say, that nothing but Cowpock matter ever produces any pock, which by its resemblance can impose upon an experienced eye, and will be considered as the Cowpock.

5. Whether the not describing the vaccine pock; the not noticing the day of the pocks represented by the plates; and the alleged precise resemblance of the Smallpock to the Cowpock; were the occasion of the mistakes among the Inoculators for the new disease, and of the impediments in practice.

6. Whether or no there is any evidence of the Petitioner having discovered any new method of preserving vaccine matter in an efficacious state; or of any new mode of inoculating. I may here remark, that the only new mode of preserving the matter, is that which I employed, and which answered so well on sending it for the inoculation at Paris in May 1800, *viz.* including it in hydrogen gas. Further; the use for the first time by me of a platina lancet, which cannot be

oxided, or become rusty, furnishes a new mode of keeping it on the lancet.

7. Whether or no the representation of the great inflammation in the inoculated part for which escharotic and caustic applications were recommended, subsequently found not to exist as stated; and when it does occur, not requiring such applications; did impede the new practice. Dr. Woodville very early observes against Dr. J.'s representation, " We have been told that the Cowpox tumour has frequently produced erysipelatous inflammation and phagedænic ulcers; but the inoculated part has not ulcerated in any of the cases which have been under my care, nor have I observed inflammation to occasion any inconvenience, except in one instance, when it was soon subdued by the application of Aqua Lithargyri Acetati.—Reports, 1799, p. 156.—These observations I confirmed in my paper of August 1799: and in the practice of the Vaccine Institution, out of one thousand cases certainly sore arms have been found to be a much more rare occurrence than in the inoculated variola.

Finally, On the head of " the right of the Petitioner to claim the discovery," the Honourable Committee affirm, that this is not limited to certain parts of the new practice, for " that the world became acquainted with this discovery by *no other means* than by his ample and unreserved communications."—P. 7, Report.

I apprehend the terms of this declaration may be understood in two senses; but as I am unable to determine which of them is here meant, I must examine the pretentions according to either meaning.

1. What is here meant may be that the Petitioner discovered all the facts, and established the rules which are the guides of the new practice.

2. The meaning may be, that the Petitioner was by his communications to the public, the immediate or direct occasion of the new practice; by making known or rendering probable some of the fundamental facts, which by the subsequent industry of several other persons, occasioned the discovery of other truths, and the experience which established the present rules.

Now as to the former meaning: In the progress of the investigation of the justice of particular claims asserted for the Petitioner, many facts from the history of Vaccine Inoculation have been exposed to view, which, if justly stated, have already shewn that this representation of the Honourable Committee is not, perhaps, correct; but the exclusive and unqualified claim here vindicated is so weakly grounded, I believe on the other facts of history, that I must, as the

Assertor of truth, in the next place make an appeal to such facts as probably will be allowed to invalidate, if not to extinguish, the claim alleged.

1. From the experience of some cases of casual Cowpock, under the observation of the Petitioner, and the common opinion of farmers, it was asserted that the Cowpock did not endanger life, but was attended with considerable painful inflammation, oftentimes of long duration.—*Jenner's Inquiry*, 4to. 1798.

2. From the same source of experience the Cowpock was declared to be a preservative from the Smallpox.—*Inquiry*, 4to. 1798.

3. From the same source of experience the Cowpock was affirmed to be not infectious by effluvia.—*Inquiry*, 4to. 1798.

4. The Cowpock was asserted not to be attended by eruptions.—*Inquiry*, 4to. 1798.

5. The Cowpock was declared to be derived from the Grease, " which makes its progress from the horse to the nipple of the Cow, and from the Cow to the human subject."—*Inquiry*, 4to. 1798, p. 6.

6. " The human body is again and again susceptible of the Cowpock."—*Inquiry*, 4to. 1798, p. 81.

7. Persons who have gone through the Smallpox are commonly susceptible of the Cowpock. *Inquiry*, 4to. p. 17.

In attempting to determine the question at issue, it is required that the preceding just asserted facts and observations, be considered in due order; having the objects above-stated in view.

1. Concerning the four first assertions, they all belong principally to the casual Vaccina, *to wit*, the disorder being dangerless; its being a preservative from the Smallpox; its being incommunicable by effluvia; and its not being attended by eruptions like Smallpox. I most willingly allow that the public are indebted to the author for the communication of these facts; but I apprehend that the small number of instances, and the want of testimonies, were far from being sufficient to prove the truth of them, and to command assent. These testimonies were furnished by the inquiries which I made into most parts of the island, and published in 1798. The requisite evidence from the vaccine inoculation practice, as hath been shewn, was furnished in the subsequent year; and by whom, has been above-stated.

2. Concerning the 5th proposition, p. 57, however immaterial whether it be true or not, with respect to the practice of the vaccine inoculation, it may be right to remark, that the author gives no proof by inoculating either the Cow, or the human subject with the matter of Grease. Even the circumstantial evidence offered, I am of opinion was so little satisfactory, that the

credit of the other important facts communicated by the author was much injured by the proposition under notice. Further: the assertion of the origin of the Cowpock in the Grease excited a prejudice, however unreasonable, which also contributed to produce adversaries to the new practice. It must be understood that I now speak merely of the effects of this opinion on the public mind by the first publication of the author. I do not mean to enter into the account of all that has been said upon this point; but think Mr. Coleman's evidence worth relating. —Also as it is among the numerous misrepresentations of correspondents with foreigners as inserted in the *Bibl. Brit.* vol. XVI. p. 397, and copied in Husson's Recherches, *Paris*, 1801.

" Une Lettre de Londres nous apprend, que Mr. Coleman a enfin réussi à inoculer les *eaux aux jambes* d'un cheval à une vache; que cette inoculation a produit un ulcère sur le pis de la vache, et qu' avec virus pris sur cet ulcère on a inoculé un enfant qui a eu une vaccine bien caractérisée." I had strong reason for disbelieving this statement, but was compelled to obtain the authorized disavowal, which I received in the following terms:

My Dear Sir,

There is only *one word* left out in the account of my experiments on the matter of Grease, *viz.*

That I have NOT been able to produce the Cowpox with any matter taken from horses.

Your's very faithfully,

E. Coleman.

Veterinary College,
July 16, 1802.

3. On the 6th proposition, that in the same person the Vaccina may be repeatedly excited, I remark, 1. that it was not manifested by a single instance of inoculation in the author's work, published in 1798, so often cited; but the assertion was founded on cases of casual affection from the vaccine matter; and Dr. Jenner not being acquainted at that time with the diagnostic characters of the vaccine pock, attended by the specific constitutional affection, it is too obvious to need explanation, that such cases might be analogous to those of repeated local affections, in the same person, from the variolous poison.—2. The fact asserted by the author of a person being incapable of taking the Smallpox after undergoing the Cowpock, but of being again incidental to the same disorder, viz. the Cowpock, it appeared so strong against reason, (see p. 60,) as to greatly weaken, indeed in a great measure to destroy the credit of the author's other statements.—3. Those who believed the fact, spoke of it as a disadvantage; alleging, however unfairly, that the introducing into human society a new kind

of infection, which could excite a disease an indefinite number of times, notwithstanding the advantages displayed, did not receive a compensation in the incapability induced of taking the Smallpox infection. On this ground indeed some degree of clamour was raised against the proposed new practice, and the Innovators. That the objections to the commutation were not confined to this island, appears from the following passages in Dr. Currie's Letters on the Kinepox, Philadelphia, 1801, p. 11: "I should have inoculated two years ago, having received an infected thread for the purpose from Dr. G. Pearson; but was deterred at that time by the opinion mentioned by Dr. Jenner, of a person being liable to be infected with the Kinepox more than once, though he was thereby rendered for ever secure against receiving the Smallpox. To substitute the Kinepox, therefore, on these conditions appeared to me too much like exchanging a temporary evil, limited in extent, for one of frequent occurrence, and to which we should be perpetually liable. But the proofs of the superior mildness of the Kinepox, and the great difficulty and extremely small chance of ever taking it in the natural way, collected and published since that time by Mr. Ch. Aiken, and the intelligent and benevolent Dr. Lettsom, and also the statement of Dr.

Pearson, in Duncan's Annals of Medicine for 1800, have removed all my apprehensions, and of course all my objections."

It may be seen in my Inquiry, 1798, that I shewed how ill-grounded this assertion was by the author; and I offer the experiments referred to in August, 1799, p. 48, and in other publications, as positive evidence to disprove the proposition. A number of persons have repeated my experiments, and uniformly I believe with the same result. Among these whom I recollect at this moment are Mr. Kelson, of Seven Oaks; Mr. Branson, of Doncaster; Dr. de Carro, of Vienna; Doctors Ballhorn and Stromeyer, of Hanover; Dr. Sacco, in the Milanese.—See also my experiments in the Medical Annals, 1799, p. 318.

It is truly astonishing that foreigners should so often misquote the words of authors: accordingly the very learned and ingenious physician, Dr. Sacco, (who discovered the Cowpox among the Cows of Lombardy and Switzerland, as it had been in Holstein) having been so obliging as to present me with his work, entitled, "Ozzervazioni pratiche sull' uso del Vajuolo Vaccino, come preservativo del Vajuolo Umano, 8vo. *Milan*," I say this author does me the honour to quote my opinion as coinciding with Dr. Jenner, that a person can take the Cowpox after having had the Smallpox. To disprove this opinion, Dr. Arragoni, who had had the confluent Smallpox, was inoculated for the Cowpock with fresh matter, but it only produced what is called the Spurious Cowpock.

Dr. Sacco has equally misrepresented my opinion concerning the other fact in question, by saying, that I also agree with Dr. Jenner, that a person can have the Cowpock more than once; to shew the mistake, he was himself repeatedly inoculated with the vaccine matter, with the same effect as that produced on repeatedly inoculating the variolous matter. Dr. Sacco, by the way, is the first author who has given the world a drawing of the vaccine eruptions on the teats and udders of the Cow.

4. As to the 7th proposition (p. 132) that persons are commonly susceptible of the Cowpock, although they had undergone the Smallpox. 1. This assertion, like the former, was only supported by cases of casual Cowpock; and how equivocal they are, has been above exposed. 2. The apparent, and almost mathematical demonstration of the impossibility of its being true, has been attempted to be shewn, (p. 67, 68.) 3. The clamour against the proposal of the new inoculation was partly on account of the apprehensions that persons who had already gone through the Smallpox, would be in a worse state of society by the introduction of a new infection. 4. To the direct experiments positively against this assertion, p. 60,

65, I have only seen one in support of it by the author in his third treatise, 1800, p. 26, on the authority of Mr. Fewster. Much as I value Mr. Fewster's Observations, I cannot allow any weight to this adverse case against the numerous experiments I have made; and some of which are published, (see the paper referred to, August, 1799, p. 60, and Medical Annals, 1799, p. 318,) besides those above (p. 137,): especially as it is not proved by a description of the pock, that the disorder excited was the vaccine pock, attended with the constitutional disorder, which destroys the susceptibily to the Smallpox.

If the preceding statement of facts be authentic, it is proved,

1. That the new practice was obstructed by the obvious objections on account of the assertions concerning them by the Petitioner.

2. That these objections were obviated by the experiments of others, which made appear that these facts were not established.

We next must look again over the Petitioner's second Treatise, (Further Observations, 1799,) to determine the question before us, and stated, p. 131.

Certain applications of a caustic or escharotic nature are recommended " to stop the progress of the pustule;" with the observation, that " a secondary disease, if the pustule is left to chance, often comes on."—P. 32, 34.

How unfavourable to the introduction of the vaccine practice this proposal must have been, is obvious, and has been noticed. That the practice recommended was unnecessary, I nearly demonstrated in my circular letter, p. 45; but Dr. Woodville next very early testified against such measures. "We have been told," says he, "that the Cowpox tumour has frequently produced erysipelatous inflammation and phagedænic ulceration; but the inoculated part has not ulcerated in any of the cases which have been under my care; nor have I observed inflammation to occasion any inconvenience but in one instance, when it was soon subdued by the application of aqua lithargyri acetati."--*Reports*, 1799, p. 150. The use of caustics was thus betimes shewn to be not wanted, and was prevented; except in a few instances, where oil of vitriol (sulphuric acid) was employed, "in rude hands;" of indeed persons neither authorised to practise, nor possessed of adequate elementary knowledge. I published in my Paper of August 1799, the result of my experience, shewing, that such applications were not required; and the practice in one thousand cases at the Vaccine Institution, registered twice every week, during two years, shew that not a single case has occurred in which there was any temptation to use them. In the Petitioner's third Treatise, published about April 1800, besides the observations already cited, it remains to take notice of one in this place.

The author accounts for the appearance of eruptions in Dr. Woodville's practice, "from the inoculation of a great number of the patients with variolous matter, (some on the third, others on the fifth day) after the vaccine had been applied."—p. 7 and 8. Dr. Woodville has, I am pretty sure, remarked on this observation; that it is without proof, and that the fact is not as here stated; but if the assertions were truly grounded, I would say that the explanation is merely hypothetical, and I am able to shew from experience that it is not the true one.

1. I have already ascertained by the many trials I have made of inoculating variolous matter, even a day later than the vaccine inoculation, that if this latter took effect, the variolous infection only produced, at the most, a pimple for the three or four first days, and an imperfect Smallpock vesicle during the succeeding days, which seldom suppurated, but usually began to change into a scab before the tenth day, without any Smallpox like eruptions; meanwhile the vaccine pock continued its usual march through its different stages. When the variolous inoculation was instituted at a later period after the vaccine, but before the 6th or 7th day, the pimple only, was sometimes produced, in the

inoculated part, which disappeared in a few days; but at other times a small vesicle succeeded the pimple, which, however, became a small scab usually on the 9th or 10th day, without leaving a cicatrix; and this pimple never suppurated. If the Smallpox poison be inoculated as late as the 7th, 8th, or 9th days, I have frequently seen a small pimple produced, but oftentimes with not even more effect than that from a puncture or scratch with an unstained lancet.

2. In the reverse order of Insition with the two poisons, at least with the vaccine, within three or four days from the variolous, the Smallpox was excited in the usual manner; and the Vaccina observed the march, as above described in the variolous inoculated part.

3. When the two kinds of infection were inserted on the same day, usually both of them took effect; and the two affections pursued their course pretty exactly, with equal paces, at the same periods, and with the same phænomena as when they take place singly. In such cases the matter of the part inoculated with variolous infection, and of the eruptions, were found to produce the Smallpox; and the matter of the vaccine pock excited the Vaccina, on inoculation. In these instances a cicatrix was left in each arm.

4. It has been already represented, that the fact above stated, now under remark, is referable to a new law of agency of morbific poisons, *to wit*, the Smallpox effluvia being introduced into the constitution, nearly cotemporary with the introduction of the vaccine matter by inoculation; the former exerts its specific power of producing the Smallpox in four, five, or six days sooner than it usually does singly, so as to keep pace with the constitutional affection (as far as can be perceived) of the Vaccina, or nearly so. This coincidence which was not suspected by any physician (who, like Dr. Woodville, knows so accurately the history of the facts of infectious diseases) to depend upon a new law, seems to be the truth; for there was no pretence for doubting that the vaccine inoculation, analogous to the variolous, would supersede the agency of the variolous poison admitted casually in the state of effluvia. Dr. Woodville, however, did not scruple to recall his opinion in January 1801, (Med. and Phys. Journal, p. 6,) by which time the facts of experience had afforded indications of the law, now, I believe, generally admitted to furnish a satisfactory explanation.

5. The fact that the Smallpox by effluvia, or in the casual way, can take place within a limited time after the Cowpock, was first observed

in Mr. Malim's case, see Med. and Chir. Review, No. 58; and I think Mr. Bevan's case (Med. and Phys. Journal, p. 455, vol. V.) is an instance of the same kind; but such occurrences are extremely rare, unless some of them occurred, as I suspect, although unobserved, among the eruptive patients at the Smallpox Hospital. However, I see no known principle to which these facts can be referred; therefore it will be for further contemplation to determine whether or no they also indicate a distinct new law.

Hence it appears there are two different sets of eruptive instances, *to wit,* 1. Those of the casual Smallpox contemporary with the Vaccina: 2. Those of the casual Smallpox supervening a few days after the constitutional affection in the Vaccina. These phænomena observed in the Cowpock inoculation practice, open new prospects in the animal œconomy.

The line of order, also, of the phænomena in the instances of the cotemporary introduction by inoculation of the vaccine and variolous poison, of the inoculation of the variolous poison within five or six days after that of the vaccine; and of the vaccine within five or six days after the variolous; afford materials for contemplation, from which, useful applications may be made in practice, and interpretations be afforded in physiology.

But it does not appear " ample," as the Committee affirm " the communications of the Petitioner" to have been, that the public owe any thing to him on these accounts.

In the preceding pages I have stated but a part of the facts which belong to the history of the Vaccina; yet I have consciously omitted none of those asserted to have been the discovery of the Petitioner. I might therefore now deliver the remarks which are occasioned by the preceding historical statement, with a view to the objects of this publication set forth at p. 5; but to avoid repetition, and to render those remarks more instructive, I shall first go through the examination, judged necessary, of the next division of the subject of the petition.

3. The *third head* of the petition, and the last (p. 6,) which remains unexamined, is stated to be, " The advantage in point of medical practice, and the pecuniary emolument which he has derived from it" (the discovery.)

The Petitioner sets forth in his petition, that " after a most attentive and laborious investigation, setting aside considerations of private and personal advantage, and anxious to promote the safety and welfare of his countrymen, and of mankind in general, did not wish to conceal the discovery he so made, or the mode of conducting this new species of inoculation; but immediately disclosed the whole to the public, and by communication with medical men in all parts of this kingdom, and in foreign countries, sedulously endeavoured to spread the knowledge of his discovery and the benefit of his labours as widely as possible."——" That the series of experiments by which this discovery was developed and completed, have not only occupied a considerable portion of your Petitioner's life, and have not merely been a cause of great expence and anxiety to him, but have so interrupted him in the ordinary exercise of his profession, as materially to abridge its pecuniary advantages, without their being counterbalanced by those derived from the new practice."

The ground of this claim is allowed and asserted in the following words of the Honourable Committee:—" Evidence has been received from persons who were acquainted with the medical practice and former situation of Dr. Jenner, (No. 40,) which confirms the allegation contained in the petition, that he has been a considerable loser by the persevering attention which he has bestowed upon this one subject, to the neglect of his other business, and without an opportunity of replacing himself in the situation which a desire of publishing and diffusing more extensively, and establishing beyond the reach of controversy, the practice itself, induced him to quit; what his gains might probably have been, if he had been solicitous to keep the secret within his own practice, and that of his immediate pupils, as far as medical men, in great practice themselves, can form a conjectural opinion, may be collected from the testimonies expressed in Nos. 35 to 43, in which no more than justice is done to the liberality and public spirit of the Petitioner, in pursuing the propagation and extension of the important discovery, and in rendering it rather of universal utility to the human race, than of emolument to himself."—Report, p. 7.

The evidences heard by the Honourable Committee in vindication of these claims, as appears in the Appendix to the Report, gave the following testimonies:—

He was acquainted with the extent of Dr. Jenner's practice before he left Gloucestershire, where he was situated in a very *populous neighbourhood,* without any practising physician within 16 miles; well supported, and of course *in the most considerable practice;* and he thought that in consequence of his quitting his situation in the country, and coming to town, he had lessened his income most considerably, as two physicians had succeeded to the situation which Dr. Jenner had left, *both of whom are in considerable practice,* and of course Dr. J.'s situation cannot be re-attainable.—*Taylor,* p. 32, No. 40. To this point I find no other evidence, but the Committee mention " persons acquainted with Dr. J.'s situation".—The next in order speak to the other point, or claim—He thinks that if Dr. Jenner had settled in London, and kept *the practice a secret,* he might have made 10,000l. per annum for the first five years, and double that sum afterwards; for notwithstanding the assiduous labour of Dr. Jenner and others to instruct practitioners, important errors are committed in it, both at home and in foreign parts. (Bradley, p. 30.)—Thinks Dr. Jenner has suffered materially in his fortune by making this discovery public: that on its being first-mentioned to him by Mr. Cline, he said, that if Dr. Jenner was confident of its success, and would reside in London, *he would insure him* 10,000*l. per annum;* but that, if he suffered the secret to be divulged, every practitioner would get hold of it, and Dr. Jenner lose all chance of emolument. This has actually happened, and he has therefore lost the opportunity of making his fortune. (*Farquhar*, p. 30.)—He thinks if Dr. Jenner had kept it a secret, as he might have done, he might, during his life, have become the richest man in these kingdoms. (*Sims*, p. 31.)—If Dr. Jenner had kept this discovery to himself, his practice might have been worth 10,000*l.* per annum. (*Ring*, p. 31.)—If Dr. J. had rendered the subject more studiously mysterious, and by that means secured to himself in some degree a monopoly of the practice, &c. it would have been a source of much greater emolument to him. (*Saunders*, p. 32.)—If Dr. J. had kept this practice a secret to himself, he might have derived immense pecuniary profits; and that, considering the apparent incredibility of the practice, to common observation, and the secrecy with which the Suttonians long monopolised the inoculation of Smallpox, he was fully convinced that Dr. Jenner might have exclusively kept the practice to himself for a long period. (*Lettsom*, p. 34.)—He did not imagine that he could long have kept this new practice an entire secret, although, by not making it public, he might undoubtedly have reaped much greater emolument. (*Frampton*, p. 35.) —In the present improved state of Society and of Physic, it might be difficult to keep any discovery of this sort altogether a secret; but if Dr. J. had not chosen openly and honourably to have explained to the public all he knew, he might, considering the difficulties of selecting matter, have acquired a considerable fortune. (*Baillie*, p. 95.)

On the credit of this Report of the Honourable Committee, several Members of the House of Commons, when the question of remuneration was agitated, gave their opinion. *Mr. Windham* said, the Petitioner *had not concealed* the practice for profit, hence was entitled to remuneration. He had the sole merit of the invention, without any pretentions to the contrary, and had sacrificed his profit. The discovery was the result of years and extensive experience. *Sir John Sinclair Erskine* observed, that the author had, he was assured, expended 6000l. ! ! in propagating the discovery. Had given up 600l. a year in Gloucestershire for the purpose of benefitting his fellow-creatures. In London he had hardly cleared his expences. If he had 10,000l. he would not have more than 4000l. profit. *Mr. Courtney* said, as the Cowpock inoculation was calculated to save 200,000 persons lives annually, he thought the Petitioner entitled to his tithe for the remuneration. *Mr. Grey* considered 10,000l. as only an indemnity for expences, not a reward. *The Chancellor of the Exchequer* thought the sense of the House amply expressed by the sum of 10,000l. *Admiral Berkeley* declared the expences were to the Petitioner from 25 to 30 shillings a day for postage. *Mr. Bankes* said, he was persuaded the discovery was of great utility. If he felt more niggardly than any other Member, it was because there was one paramount duty, which, as a Member of the House of Commons, outweighed all other duties—the essence; the strength of the constitution was, that the Commons should watch as a strict guard over the purse of the people. The public purse was a large one, but still every man should not be suffered to dip his hand in it who pleased. The public was a liberal remunerator.—*Did not think a case had been made out for so large a sum as* 10,000*l.* In other cases the invention could not pay itself. Rewards were given by the public in the way of a bargain for the invention, and that the present was not one of those inventions of this description. The discovery would pay itself to the author. *He always looked upon the Report of a Committee with some degree of jealousy, as he considers them in the light of Nominees to try the merits of a controverted election, as being the friends of the Petitioners.*

It was determined accordingly on Wednesday, June 2d, 1802, (see the daily newspapers,) that the sum of 10,000l. (clear of expences of the House) be paid to Dr. Jenner, for promulgating the discovery of the Vaccine Inoculation, by which mode that dreadful malady, the Smallpox, was prevented.

I. According to the Petitioner's representation on this division of the subject of the Report, he has not only communicated to the public the matchless discovery of Vaccine Inoculation, for which benefaction, I think, one cannot satisfactorily set limits to the remuneration merited from human societies; but further, that the series of experiments for this discovery had occupied great part of his life, and been attended with considerable pecuniary, and other sacrifices; while for the public benefit, by the disclosure of the new practice, he forewent the private advantages which were in his reach. I feel a strong disinclination to scrutinize this part of the petition with rigour, and to decide with the severity exacted by truth. Accordingly I leave it to others to judge from the preceding history of facts, except declaring my opinion, that concealment would here have prevented the author from enjoying any advantage whatever; *first*, because he had not established the necessary data from experience: *secondly*, because the public, in all likelihood, would not have accepted the new inoculation on any one person's authority: *thirdly*, the circumstances of what was already known of the Vaccine Pock History were such (as will appear hereafter) that it was impossible to have concealed from others the kind of matter inoculated.

II. With regard to the claim asserted by the Committee on account of the Petitioner's quitting his situation to introduce the vaccine inoculation, I am unable, from my own feelings, and from apprehensions of being suspected to be actuated by invidious motives, to examine the statement. Let then the history I have above given of the Vaccina speak to that question, and tell whether or no the introduction and establishment of the inoculation required, and depended upon the Petitioner's changing his mode of life and residence.

III. We are now advanced in the line of order to remark on the testimonies of the evidences. p. 147—149.

The attestations delivered are the opinions of several professional gentlemen, that the Petitioner, by concealing the discovery of Vaccine Inoculation, and appropriating it to himself, might certainly have acquired a great fortune— Such a fortune indeed, as no one ever acquired by physic in this, or in any other country—far exceeding the greatest ever known; those of Sir Theodore Mayerne in the first half of the 17th century, and of the still greater one of Dr. Ratcliffe in the early part of the last century; for we may safely affirm, that neither of them received from the public 150,000l. in ten years, as it is attested might have been effected by preserving secrecy of the new inoculation. Ten thousand pounds a year appears to have been the lowest computation of the evidences on the point under examination.

Although in my remembrance there has been nothing, as I judge, more romantic affirmed on a question of opinion concerning a fact, I would not write a single contradictory word to these assertions, but for two reasons: 1. To shew that a Committee on such occasions as the present, do not think it necessary to inquire for, or at least to report, countervailing evidence. 2. Because the admission of these assertions implies what I apprehend is disproved by historical truths, *to wit*, that the Petitioner did by his own experience—*suo Marte*—ascertain, and divulge the practical rules necessary for the justification of the Vaccine Inoculation.

In forming a just opinion, it must also be recollected, that the authority of any one Practitioner, being able to effect the introduction and establishment of the new practice, has been already disallowed.

Lastly, It was reserved for this place to endeavour to make appear, that the circumstances of the present discovery were such as to render, as I think, the preservation of the secret proposed impracticable. It is manifest from the preceding pages of this publication: 1. That the fact of the casual pock in preserving from the Smallpox, was known in a great number of provincial situations; and that it was not attended with eruptions, but was a perfectly dangerless disease. 2. These facts had been published before the Petitioner even instituted his experiments of inoculation. 3. Experiments of Vaccine Inoculation had been performed by several persons now living. 4. I had myself knowledge of these effects of the casual vaccine inoculation, and so must several hundreds of my pupils, to whom they had been communicated. Hence, I apprehend, it will be allowed, from these circumstances, that on the practice of the Vaccine Inoculation being once begun, although privately, of course the advantages of it must have been spoken of; and I appeal to common-sense, whether it could well have escaped scores of persons, that the new secret matter of inoculation must have been recognised to have been that of the Cowpock. 5. That vaccine matter could have been procured independently of the Petitioner, has been already plainly demonstrated; for by the attention of the London Practitioners, it was so obtained in January 1799; and the matter used, in all probability, at this day, is principally, if not solely, that which has been generated successively in the human animal, beginning in the first instance with the matter of the London Cows.

As the demonstration of truths depends upon the evidence of sense, and the power of reason; which I have opposed to mere opinions, unsupported by assigned reasons and facts, it is not exacted of me to explain the grounds of these attested opinions, in order to establish what I have asserted. I might therefore be well contented to leave it to others to determine for themselves. But as I perceive that the above opinions are not well founded, it may perhaps be deemed proper in me to give an explanation. It is then I think plain from the other parts of the testimonies of these gentlemen, that however well informed and superior their judgment in the just estimation of the public, yet they were not possessed of historical truths enow to capacitate them for delivering opinions, founded on the basis of facts and reason. They do not seem to have had motives to investigate the origin and first advances of the practice of vaccine inoculation. They risqued nothing in the early period of vindicating the new practice for the public; if it had failed, as they were then perfectly *hors de combat*, they would not have experienced discredit; so having been established, they were not interested in claims of credit. As to discoveries, all the part they had in them, as Falconbridge says, " you might have eaten on Good Friday without breaking your fast." Hence these testimonies, although of the first order on other accounts, ought not to be considered as of proportional weight on the present question; their information being only derivative from the discoveries and experience of others, by whom the battle may be said to have been won before they appeared in the field. As then the evidences were unacquainted with that branch of the history which was necessary to inform them, and doubtless were interested as friends of the Petitioner, (I mean very warrantably so) the attestations above cited will on this explanation cease to excite our wonder.

From the Committee we proceed to remark on the testimonies of the Members in the House of Commons.

Here, as it was not likely that the Honourable Members would have any information, but that derived from the representation in the printed Report; and the suggestions of friends as on a canvas at an election; no new observations on the history of the Vaccina were to have been expected. Accordingly we find what was said were nothing else but echoes of the Report, and some statements; which were considered to be the usual exaggerated accounts of friends, to the pecuniary interests of the petition. What has been above represented, as incorrect in the Report of the Committee in point of historical fact, and therefore unwarrantable in the inferences; must in course again have been manifested in the House of Commons—

> Quicquid delirant reges plectuntur Achivi.

And the only question of debate was, the *quantum meruit.*

We find the Honourable Members apparently spoke with a degree of ardor and confidence, which denoted that they felt themselves perfectly competent to decide, not only on the merits of the new practice, but on those of the Petitioner. The preceding pages may, perhaps, tend to capacitate persons, who desire information, in establishing a wellgrounded opinion on the merits of at least one of these questions.

On this occasion the wisdom of a Member (who himself was one of the Committee *) was conspicuous; in admonishing the House of the duties they owed to the public; and in explaining that the Report ought to be considered as a partial representation, being that of friends. He thus shewed, in the public estimation, the superiority of his judgment, and prudence.

The preceding pages contain all the facts of the *Cowpock*, which to my knowledge have been asserted as the original observations of Dr. Jenner; and although they do not contain all those I know belonging to the history of this disease, which have been found out by other Inquirers; yet I believe what I have delivered will be equal to the design proposed at the beginning of the work. Before I reason upon the particulars of this statement, I think it is a matter of justice to myself to explain, that although my intention has been to give credit to whom due for the discovery of facts, and to make no inferences but such as seemed unequivocal, I am aware that the statement may be judged by others to have been differently executed from what is professed. I may unconsciously have been warped by the interest I have in the effect of the publication; and I may independently of such interest have judged erroneously. In the disposition of mind now declared, I feel no inclination to vindicate error, and injustice; accordingly I will chearfully unspeak what shall be manifested to be false, and without a pang I can acknowledge mistakes wherever they shall be made appear. As I sincerely mean to fulfil this proposal, I trust I have, in the mean time, an indisputable right to argue from the statements recited, with the objects of contemplation in view as above represented, p. 5.

---

* Mr. Bankes.

Accordingly if these historic statements be void of error, and be complete, it is, I conclude, demonstrated by them,

I. That the facts communicated to the public by the Petitioner in June 1798, were either such as were not established by commonly acceptable evidence; or if they had been established, they would hot have been alone sufficient, to instruct or teach the practice of Vaccine Inoculation. What is most of all to this point, is contained in p. 41, 42, 132.

II. The communications of the Petitioner in 1798, propagated several errors, which must have been redressed before the new practice could be introduced. The statements which bear especially upon this point, may be found in p. 132—141.

III. The convincing evidences, with a good part of the medical public, for the assertions just alluded to, (I. 159,) were obtained by other Practitioners subsequently in 1798 and 1799; who at the same times discovered a sufficient additional number of facts to set on foot the new practice. For the principal relations to these points, see p. 36, 38, 40, 42—76, 85—89—97, 102, 131—134.

IV. Many of the errors above alluded to, (II.) were, subsequent to the Petitioner's publication, rectified in 1798 and 1799; and by whom and in what particulars, are shown in p. 45, 57, 68, 69, 90, 97—112—130, 132—144.

V. New facts have been discovered, which, although perhaps not essential to the vaccine inoculation practice, yet render the basis of it stronger, and improve the practice by giving it more certainty, and affording a better knowledge of the nature of it. For the proofs of these assertions, see p. 74, 115—130, 141—144.

To what extent, or whether the Petitioner contributed at all to these improvements, may be judged from the statements, p. 74—144.

VI. The propagation of the new practice, by intercourse with Practitioners in different parts of the world, has been actively conducted; the part taken therein may be in some measure judged of from p. 46—48, 50—57, 71—74.

VII. The expenditure of time and labor, &c. can be only appreciated by professional men, and even by those only who have studied the Vaccine Pock History; but some estimate may be made by others on reading the whole of the preceding history, and considering the situations of the different Enterprisers.

The foregoing applications or inferences may, I trust, assist the public in judging for themselves, on the proposed objects as stated at p. 5: and I shall proceed to no further statements, but I take leave to propose and discuss two questions.

1. Whether or no the Vaccine Inoculation would have been introduced, at all; or to what extent, independent of the communications of the Petitioner?

This question, according to the acknowledgments already delivered, I answer without hesitation. It is not manifested, from the preceding historical recitals, through what other channel the new practice would have been brought forward; although it now appears very unreasonable to suppose, that it would have long remained in darkness.

2. The other question I have to propose is; supposing other inquirers had not stirred to in-

vestigate the subject, what would be the probable state of it at the present time?

I submit to the decision of others, whether or no it is probable that the Petitioner, singly, would have had inclination, or opportunity, to proceed with the experiments, so as to have made them of practical utility, as hath been effected; 1st, Considering the long interval, according to history, between the time of the facts of casual inoculation being known, and the experiments of his inoculations purposely.

2dly, Considering what the Petitioner contributed from the time of his publication in 1798, up to the close of the year 1799. See p. 43—86—159, 160.

3dly, Considering his opinion given of what might be the effects of the practice, p. 41—43.

4thly, Considering the errors of facts which were redressed by others, p. 57—67, 127—130.

Although the above series of facts belonging to the subject of Vaccine Inoculation, if rightly stated, will not allow the claims vindicated in the printed Report, yet they will serve to establish, in my judgment, one equally valid for procuring remuneration. And with regard to the honour of the discovery of the new practice, I know not whether, what is on the basis of the history, as I have stated it, (for my statement and reasoning may differ from those of more judicious men,) will satisfy the Petitioner; but this I know, that in the estimation of mankind in general, it is pre-eminent. It is what I asserted for Dr. J. to the Committee, *to wit*, That the advantages which human society already enjoy, or may hereafter enjoy, from the Vaccine Inoculation, are fairly owing to his communications to the public in 1798. Nor did I mean to consider these communications otherwise than as of the greatest moment; for I considered them as furnishing strong evidence of the truth of facts which have a principal share in the foundation of the present practice. The value of these facts no one has appreciated more highly than myself, on every proper occasion. Witness, in particular, in what terms I spoke of them in my papers already referred to, of 1798 and 1799; the most important period of the Cowpock history. When I said, in conversation to the Committee, that I considered Dr. Jenner's services as entitling him to the honours of the greatest inventors in physic; when I remember I named, as a parallel, Harvey himself, in point of usefulness, and as I now affirm, that, considering what he has done, he ought to be considered as the fountain from which so many beneficial streams have been made to flow:—when I allow that all that has been subsequently done are derivatives from this origin; and therefore that the author may justly assert, on the atchievements of any other Enterpriser, in the sense of the terms of Ulysses—

Opera illius mea sunt.

Finally, when no remuneration was claimed at all, nor any honour but secondary, or a mere acknowledgment was hoped for; I say when these things are known, perhaps I shall rather be blamed by most persons for extravagance of credit, than accused of disparagement. This ground being respected as the rightful property of the Petitioner, I gave it as my opinion, to the Committee, that the question of remuneration could not be affected, or at least ought not to be so, by any prior instances of Vaccine Inoculation; unless it could be shown that the Claimant had unfairly appropriated to himself the facts of another person. I farther allow, it appeared, to me that instances of Vaccine Inoculation, antecedent to Dr. J. had been instituted; yet being of opinion that such cases should be judged of liberally, on the side of the greater Deserver; I acted accordingly, when I was asked whether I imagined the Petitioner learned to inoculate the Cowpock from the persons attested to have inoculated antecedently, that I apprehended the trials were independent of each other. (Report, p. 36.)—It should be noticed that the inquiry respecting the origin of the inoculation, was provoked by the questions of the Committee; and if any instances are known, although unfavourable to the Claimant's interests, the evidence is either bound in duty to relate them, or if not so bound, then the judges, in my opinion, are blameable for proposing them.

From the representation of facts in this work, it perhaps will appear, to impartial and judicious persons in general, that a much more dignified, and more just ground of claim; and I suppose an equally favourable one for remuneration; would have been in terms denoting that the Petitioner had proposed a new kind of inoculation, and actually furnished some instances of the success of it, founded upon facts; of which some were brought to light and use, which heretofore had been only locally known to a very small proportion of persons; and others were discoveries of the author:—further, that in consequence of considerable subsequent investigations, by the author and others, such a body of evidence had been obtained, and such further facts had been discovered, as demonstrated the advantages of the new practice.

I, by reciting these terms, do not mean to dictate, I mean only to explain the principle of what I think the most honourable and just claim, founded on history, and by which justice might have been obtained by all who had legal expectations of credit.

This discussion is perhaps a matter of indifference to society at large, and parties adverse on some points to one another, must, if they be good moral men, concur in the exultation of the capability obtained, of with certainty, and I think with ease (if governments give aid) annihilating the Smallpox ; as I have fully explained in my first paper in 1798.

The present new practice now puts a power into our hands, which the other day stood not within the prospect of belief. The victory to which we are at this time invited, is of immeasurable value; those of your Rodneys, your Howes, your Vincents, your Nelsons, &c. lose their splendor—all fade before it.

Society are under the obligation, for this capability, to the author of the Petition before us,

> Jam labor in fine est. Obstantia fata removit.
> Altaque, *posse capi faciendo,* Pergama cepit.

Whether it was exacted in the late inquiry of the Legislative Body, that the exclusive claims should be maintained to compass the pecuniary reward, I have not legal knowledge to determine; but I have some authority for stating, that the members of the Committee did *not unanimously* think such exclusive claims were just.

I had some reason to expect that the representation of the Committee in their Report, would have been such as to have satisfied the expectations, not exorbitant, of Dr. Woodville * and myself; such as would have cost the Petitioner nothing, *to wit*, a mere acknowledgment of services. The most unqualified and exclusive claims having been decreed, this bounty of course has been withheld, either because it was judged to be not owing, or from some other motive which I will not name; but it is fitting that I disclaim any insinuation of unworthy motives, actuating those with whom the judgment was invested. Having the advantage of being personally known to several of the Members of the Honourable Committee, I sometimes flattered myself, but vainly, that perhaps considerations of friendship, though slight, (for such motives confessedly do operate on these occasions) might have had an influence with, probably, more than one—Et tu Brute!—" Miror te amicitiam nostram—age, mitto amicitiam: humanitatem, æquitatem, omnium consuetudinem usque adeo neglexisse, ac parvi fecisse; ut mihi meas vindemiolas præripere, mearumque vigiliarum fructum præcerpere conareris.——Estne hominis politi, et communem hominum societatem sanctam et inviolatam tueri cupientis, partes alienas sibi ultro arrogare, et vendicare * ?"

---

* Dr. Woodville being acquainted with the design of this work, and having seen a part of it while printing, I can say that it receives his approbation.

Besides the labours of experience, perhaps something might justly have been expected for the risque undergone in the first year of the new practice, *viz*, in 1799. If at the close of that year experience had shewn, that so far from gaining advantages by the Vaccine Inoculation, it was found to have been attended by hurtful effects, the Petitioner might fairly have vindicated his conduct; by alleging that he had only offered a few cases for consideration, and future determination, which were merely in the form of queries: but if other persons had thought fit to introduce it as safe and advantageous practice, in consequence of which mischief had been done, they were responsible. And however respectable, on many accounts, the evidences in the printed Report, who gave such unqualified attestations, they took no ostensible part in the most arduous period, *viz.* the *year* 1799. How the new practice was sneered at by some: how it was reprobated as a gross and most mischievous imposition: how it was stigmatized with the appellation of, *the Gloucestershire bubble:* and how the Inquirers were considered, by many persons, as fit candidates for a certain asylum; to say nothing of the villainous jests made on the occasion * ; are recent in our memory. Nor did it escape our observation that many Practitioners of note; who either objected to the new practice, or were at best passive only; accepted of offers to inoculate from prudential considerations—from "commodity"

---

* Lambinus Mureto.

That daily break-vow, he that wins of all,
—That same purpose changer, that sly devil,
That smooth fac'd gentleman, tickling *Commodity*—
Commodity, the bias of the world.
This sway of motion, this *Commodity*,
Made them take heed from all *indifferency*.
Nor had they then the power to clutch the hand,
When their fair *Angels* would salute the palm. *K. John.*

---

* Among the satirical verses, as a specimen, the following are from the Prologus ad Phormionem, at the Westminster Anniversary Dramatic Representation, 1800:—

Respuo Vaccini idcirco contagia morbi,
Proxima progenies *ne vitulina boet.*

" I have attempted to improve the plan of mitigating the Smallpox in the human species, by passing it through the medium of the Cow. Now as every one is not in possession of a Cow, I shall propose a plan of passing it through the medium of animals most people are in possession of, I mean *Cats*; and therefore shall only alter the title of the plan, by calling it the Catpox. When my plan is matured and fit for publication, the ingenious writer shall hear and see more upon the subject."

" For ridicule shall frequently prevail,
" And cut the knot, when graver reasons fail."
Gentleman's Magazine, August 1799, p. 666.

I am now desirous of knowing the sentiments of the impartial and worthy part of my fellow members of society, on the present publication; whether it was fitting it should be issued, even supposing all that has been stated be true; whether the statements will be allowed to be just or otherwise; whether the inferences from the facts will be granted to be legal or not; are questions to be determined. As I mean to keep my promised word of acknowledging such errors as shall be made to appear, and to listen to proposals of further necessary inquiry, I trust I shall not be deemed unreasonable in insisting upon the conditions; that the statements and reasonings against me be delivered with equal temper to mine; and also that the adverse parties take care that their assertions be supported by facts. In case of failure in these conditions, I shall feel no obligation to answer.

I am aware that, in the setting forth and reasoning upon such a variety and so numerous a body of evidence, however wishful I have been not to offend by the terms employed; yet, from the imperfections of language, or from ignorance, I may not have succeeded; in such a case I shall offer the apology of Hamlet, "That I have shot mine arrow o'er the house and hurt a brother."

Although, in the circumstance of the event being disapprobation, I shall console myself with having acted from not unworthy motives, yet I pretend not to be endowed with such a constitution of fibres, as renders me indifferent to a contrary reception.

> Hæc, si displicui, fuerint solatia nobis:
> Hæc fuerint nobis præmia, si placui.
>
> *Martial.*

APPENDIX.

The following Notes belong to the pages to which they are referred.

PAGE 27, Note.. The latin line is not accurately cited; it should have been

> Simia quam similis, turpissima bestia nobis.
> Cicero de Nat. Deor. from Ennius.

P. 47, l. 8. "The vaccine matter which first succeeded in America, with Professor Waterhouse, was transmitted from England in a bottle, with a glass stopper. Lettsom's Observations on the Cowpock, 1801, p. 24.—This matter was furnished by the Institution, where the method, here alluded to, of transporting matter was first adopted. Hence then, in addition to so many others, we have the credit of introducing the Vaccine Inoculation into America as well as France, &c.

Through the learned Dr. W. Turton, I introduced the Cowpock into Wales, who gives the following account in a printed paper: "I came to town for information, having nearly lost my son in the Smallpox; I attended Dr. P. to the villages near Oatlands, where I saw about 300 in the Cowpock. Every scruple was removed. Dr. P. furnished me with matter on thread, and June 1799, I inoculated my own two children with it. One that had gone through the Smallpox did not take the disease; the other did; she was christened by the name of *Vaccania,* to record the introduction, and by whom, *being the first Cambrian ever inoculated.*" Since this event thousands have been inoculated, without any accident, or apparent danger, as reported by the Doctor, in his letter to me, dated Swansea, Aug. 6th, 1802.

P. 53, l. 10. It was not ascertained till after some months practice by Dr. Woodville and myself, *viz.* from January 1799, till May following; that it was very common for patients to go through the Cowpock without any observable constitutional affection. This may be considered as a new fact, not expected from what had been published and communicated to me by Dr. Jenner. In this particular the Vaccina resembles the Chicken-pox, or Varicella; for, according to the observation of the most accurate of accurate observers, this latter disease takes place sometimes without any such general disorder.—In quibusdam oriuntur sine febre aut ullo signo antecedente; in aliis fit levis horror, lassitudo, vigilia, dolores vagi, fastidium cibi et quædam febricula, &c.—Gul. Heberden, Commentarii de Morb. Historia, p. 387.

P. 75, l. 5. As one of the Journals, remarkable now for its great partiality, states a conversation of Dr. Jenner at the Committee, to insinuate that the matter which I disseminated was not the Cowpock matter, when I was not present to repel the assertion; I quote the following from one of his own letters, and refer further to the accounts he gives of the cases of Vaccine Inoculation, in his Treatise, published about April 1799.

"Twelve patients have been inoculated with the London virus. This is the 9th day, and most of them are a little ill. The character of the pustules is just that of the Cowpox. I am the more induced to believe this to be genuine Cowpox, from the following circumstance, &c."—Extract from Dr. Jenner's Letter, dated Berkley, March 13, 1799.

P. 90, l. 20. Mr. *Carpue,* who has so very diligently attended the Cowpock Institution, in the discharge of his duty as a Surgeon, and to whom the Establishment owes very much for the support of its credit, and present flourishing state, favors me with the following answers to my questions respecting the choice of matter :—

1. What difference, or have you observed any difference in the effects of vaccine matter taken *before* the red areola is formed, and when it is formed, and whatever be the age of the vesicle, provided it be a distinct regular pock, and has not begun to scab ?

A. No difference whatever in my experience, which has been generally to use matter of the 8th, 11th, and 12th day from the inoculation. In a few cases of inoculating matter as late as the 15th day, from necessity or experiment ; even when the scabbing process had made much progress ; the matter produced as well characterised a pock, and mild an affection as usual.

2. What are the differences, if there be any, in the effects of matter taken from a vesicle which has advanced considerably in the scabbing process, and matter taken at any earlier period ?

A. I cannot well answer that question, not using such matter, as I have already said, in common practice ; but when used, I have seen no bad consequences from it.

3. In what proportion do inflamed arms occur, requiring topical application, and what are those applications ?

A. In perhaps not one case out of 100, even at the Institution, have such cases occurred ; and when they did, I believe they usually were occasioned by the bad management of allowing the linen to stick to the burst vesicle. The inflammation of the arm, in these instances, gave way to the application merely of *cold water*, which I think is one of the best local ones.

The following cases confirm Mr. Carpue's statement :

On Tuesday, August 3d, 1802, eleven persons were inoculated under my direction with 12th day matter, in each arm, from a patient present. The vesicle was beginning to scab.

Fourth day, Friday, August 6th: nine of these patients were observed to have taken the infection, the other two I did not see.

Eight day, Tuesday, August 10th: one of the two not seen on the 3d, attended, and I found had taken; but the other, not before seen, having failed, was reinoculated in the left arm with 15th day matter, and in the right arm with that of 8th day.

The other patients, viz. nine in number, going on with the usual appearances. Two patients had got a rash, but otherwise well.

Eleventh day, Friday, August 13th: the ten patients who took on the 3d, exhibited the common appearance on the arms; with the exception of the areola being less than usual. Two more patients, affected with a rash. Eruptions of the same kind, appeared in as great a proportion, at this time in the Institution, with 8th day matter. They were imputed to the very hot weather for the last ten days, and disappeared in a few days further. Patient inoculated with 15th day matter not taken, but the 8th has.

On Wednesday, July 21, 1802, I inoculated an infant, aged two months, from the vaccine pock of a patient present, being the 5th day from inoculation. The infection took, and the Vaccina went through its stages of filling of the vesicle; of inflaming round the pock; of affecting slightly the constitution on the 9th day; of scabbing; but on one arm more inflammation remained than usual, with hardness about the drying pock, so as to occasion some uneasiness, and render a little topical application necessary, on Friday, August 6th, being the 17th day.

If this patient had been inoculated with 11th or 12th day matter, certain Inoculators would have imputed the rather more painful effects than usual, to using such matter.

P. 117, l. 29. La matiere vaccine est efficace depuis le 7^{e}. Jour jusqu'au 12^{e}.; on doit la recuillir pendant ce temps là. Il faut cependant observer qu'en général l'epoque la plus favorable ne dure que depuis le 8^{e}. Jour jusqu'au 11^{e}. puisque des que la pustule vient à suppurer, la matière n'à plus toutes les qualitès requises pour la communication compléte du virus.

Lettre de Dr. Pearson, 5 May, 1800, à M. Stromeyer.

P. 125, l. 5. If the thing (Cowpock matter) could have been procured from *greasy heeled horses,* I should have had the means of propagating the disease, as *I left no experiment untried upon my poor Cows to produce it.*—Kelson's Letter.

P. 130, l. 3. In the Medical Annals for 1800, p. 437, I alluded to a method of preserving vaccine matter fluid, in an efficacious state, by keeping it in a half ounce bottle, on a spoonlike stopper withinside, with a bit of sponge included, which is impregnated with a drop of alcohol or sulphurous æther.

" I have also found that the vaccine poison will retain its infectious power for, perhaps, an unlimited time, if kept in dry hydrogen or nitrogen gas—I find a platina lancet, made as I have directed, by Stoddart, sufficiently hard and strong, for introducing vaccine matter under the cuticle, in most cases; and in all it does very well, if a slight incision or puncture be first made with a common lancet. I need not explain the advantages of the platina lancet to be, that it does not oxidify with matter upon it, and consequently it will preserve efficacious matter upon it for a very long time. It also does not require grinding like a steel lancet."—Medical Annals, for 1800, p. 439.

P. 141, l. 14. In January 1801, Dr. Woodville's vaccine practice amounted to 4000 hospital patients, and " with none of the patients did the infection occasion a severe disorder, or excite one alarming symptom."—January 1801, London Medical Review.

Copy of Dr. Jenner's Petition above referred to in p. 4.

To the Honourable the Commons of the United Kingdom of Great Britain and Ireland, in Parliament assembled,

Sheweth,

That your Petitioner having discovered that a disease, which occasionally exists in a particular farm among cattle, known by the name of the Cowpox, admits of being inoculated on the human frame, with the most perfect ease and safety; and although its symptoms are so mild as scarcely ever to prove even a temporary impediment to the ordinary course of health, yet it is attended with the singularly beneficial effect of rendering, through life, the person so inoculated secure from the infection of the Smallpox.

That your Petitioner, after a most attentive and laborious investigation of the subject, setting aside considerations of private and personal advantage, and anxious to promote the safety and welfare of his countrymen, and of mankind in general; did not wish to conceal the discovery he so made, or the mode of conducting this new species of inoculation; but immediately disclosed the whole to the public; and by communication with Medical men in all parts of this kingdom, and in foreign countries, sedulously endeavoured to spread the knowledge of his discovery, and the benefit of his labours, as widely as possible.

That in this latter respect the views and wishes of your Petitioner have been completely fulfilled; for, to his high gratification, he has to say that this inoculation is in practice throughout a great proportion of the civilized world, and has in particular been productive of great advantage to this kingdom, in consequence of its being introduced, under authority, into the army and navy.

That the said inoculation hath already checked the progress of the Smallpox; and from its nature, must finally annihilate that dreadful disorder.

That the series of experiments by which this discovery was developed and completed, have not only occupied a considerable portion of your Petitioner's life, and have not merely been a cause of great expence and anxiety to him, but have so interrupted him in the ordinary exercise of his profession, as materially to abridge its pecuniary advantages, without their being counterbalanced by those derived from the new practice.

Your Petitioner, therefore, with the full persuasion that he shall meet with that attention and indulgence, of which this Honourable House may deem him worthy, humbly prays this Honourable House, to take the premises into consideration, and to grant him such remuneration as to their wisdom shall seem to meet.

EDW^{d}. JENNER.

Ille crucem sceleris pretium tulit, hic diadema.

Juv.

One of the Medical Journalists, Dr. Bradley, has thought proper to step aside, in numerous instances, from what I apprehend is the path of his duty, which is simply to record what is passing from literary publications, and from original communications, to become voluntarily a *partizan*, and set up for a *Judge*. The propriety of such conduct in general, and the calumny he has published in his last number, (Med. and Physical Journal for August 1802.) I should not have noticed in print, but that he has communicated to the world a part, not printed by the Committtee, of my evidence and examination, with even conversations. These details he has accompanied with false statements, and with remarks, to say the least, in unbecoming language. But the Journalist has omitted my evidence, as printed in the Report, (see p. 36.) which is a distinct one, and delivered on a different day from that which I recognise to be mine, as given in the Journal. The injustice, and perhaps breach of trust, committed by this procedure, I imagine will not escape notice; although, if the evidence had been printed without its accompanying remarks, it would not have been offensive, because it would have enabled me to manifest more fully my conduct, in attempting to shew grounds of remuneration, as I think more dignified and more consistent with the truths of history, than those asserted by the Committee.

The sense of the oral statement which I gave, though in some parts, as printed in the Journal, it is incorrect, is agreeable to what is set forth in the preceding pages; and I think it proper to avail myself of reprinting it, with the necessary corrections, desiring no other justification (if any be required) than the very transcript which is seemingly destined to excite prejudice against me. I do not, however, offer this oral evidence as a complete historical statement, but it may be useful, and serve to enable the public to judge whether the Journalist had a right to call it, deridingly, an "Oration."

"I have admitted Dr. Jenner was the gentleman who first set on foot the inquiry into the advantages of vaccine inoculation; but I apprehend that the practice of vaccine inoculation, which was first promulgated by Dr. Jenner, has been established almost entirely by other practitioners; and that his new facts, or which I consider to be new, have been in my opinion disproved by subsequent observers—that in consequence of those facts being disproved, together with the very ample experience of other persons, we owe the present extensive practice of the vaccine inoculation.

Will you inform the Committee, who those practitioners and persons are to whom you refer?

The Cowpock inoculation after Dr. Jenner's book was published in May or June, 1798, which contained seven or eight cases, the whole result of his experience, was not practiced by any person that I know of, till January, 1799, neither Dr.

Jenner nor any person that I could find being in possession of matter; but in January, 1799, in consequence of a general inquiry, which I had instituted immediately after Dr. Jenner's publication, information was given of the Cowpock disease breaking out in two of the Cow-stables near London, and from these sources Dr. Woodville and myself collected matter, by which, in the course of about three months, not fewer, I think, than 300 persons were inoculated for the Cowpock in addition to the seven or eight cases of Dr. Jenner, then the whole stock of facts of inoculation before the public. Besides carrying on the inoculation ourselves in this manner, we disseminated the matter throughout the country, in particular to Dr. Jenner * himself, and particularly also, I within that time issued a printed letter, directed to upwards of two hundred practitioners in different parts of the kingdom, containing thread impregnated with Cowpock matter. In the course of this practice we already learnt that *young infants* might be inoculated with safety, which I considered to be then a new fact, Dr. Jenner not having had the experience, and being apprehensive of serious consequence from inoculating them. Secondly, That the inoculated arms, so far from requiring caustic or escarotic, or other topical applications, were sooner cured than in the inoculated Smallpox; that Dr. Woodville's publication in June, 1799, appeared, containing the cases of upwards of 400 inoculated at that time; and in August, 1799, I published a statement of inoculations, referring to many practitioners, who had furnished me with reports of inoculation, with matter which I myself had furnished; among these I beg leave to mention Mr. Kelson of Seven Oaks, Dr. Mitchel of Chatham, and Dr. Harrison's cases, as communicated to me by Sir Joseph Banks: and by that time I had also introduced it into the army, through the hands of the Surgeon General Mr. Keate, and reports frequently came into my hands by his direction from the army; I had also by that time introduced the vaccine inoculation into many parts of the continent, and received reports of the successful practice of it, in particular from Dr. De Carro of Vienna. In addition to these testimonies contained in the paper above alluded to, is the result of my own practice in three parishes of poor people inoculated under my superintendance, so that, in that paper, I believe it will be found that two thousand cases had by that time been afforded for the public by Dr. Woodville and myself, and the persons with whom I was in correspondence, and who are mentioned in the papers alluded to. By this time too, some difficulties appear to have been removed in a great measure occasioned by some facts stated to the public by Dr. Jenner: in particular I published experiments of inoculation in the paper alluded to of inoculating persons with the Cowpock, who had undergone the Smallpox, to shew that they *could not take the Cowpock after the Smallpox,* contrary to Dr. Jenner. Secondly, experiments to shew that persons could not take the Cowpock both locally and constitutionally, who had already gone through the Cowpock, also contrary to Dr. Jenner. Thirdly, many persons had at this period, made experiments to shew that the *Cowpox did not originate in the grease of horses' heels,* as Dr. Jenner had asserted; these sentiments will be found in a printed statement which I beg to deliver in, as published by me. In the spring of the year 1799, when the above stated evidence was collected, a second publication appeared from Dr. Jenner, adding nothing but a few cases of inoculation further of the Cowpox, but recommending caustic or escarotic applications to the inoculated parts, in the Cowpox, not found necessary by the medical persons alluded to in my evidence; and I consider that the distinctive characters of the Cowpock were understood better by some of the above alluded to persons than by Dr.

---

* Dr. Jenner, both in letters to Dr. Woodville and myself owns this matter excited the genuine Cowpock, although he afterwards in the Committee said, as stated by the Journalist, it produced the Smallpox. In these letters he also expresses his great apprehensions for infants.

Jenner. The vaccine inoculation was next considerably established by the Cowpock Institution, of which I was one of the founders, commencing at the very close of the year 1799; which Institution has been the principal office, I apprehend, for supplying the world in general, and the army and navy in particular, with matter; and where a regular register is kept of each of the cases inoculated, more fully and accurately than had been done any where before or since that time; where the authenticity of the cases, from the nature of the institution, is established in a manner that I apprehend will be considered as unexceptionable; this appears from a register of above seven houndred cases already entered, and open to the inspection of the subscribers. By this time, namely, the close of the year 1799, I think I can make it appear that about four thousand persons had been inoculated by Dr. Woodville, myself, and correspondents, which can be referred to. I here close my evidence, as I consider it of very small importance, comparatively, what was done by others after this time, all the facts that I recollect of use in practice being by this time established, as they have been since confirmed."

Having so fully explained, in this publication, what was proposed in the cross-examination, I do not think it necessary to notice it. But as in a note there is something like an insinuation that I was not correct in what I stated, on the authority of Dr. Heberden, it may be right to say I was strictly so, except that his information did not come directly from Mr. Battiscombe, but from him through Dr. Lind; and I stated the fact with the previous entire approbation of Dr. Heberden.

The author, in his Journal, affirms that all present were astonished at my asserting that I was convinced Mr. Nash had been an experienced Vaccine Inoculator, and that it was not supposed I could make such an assertion without plausible proof. If I had not had such proof, I certainly should not have made the assertion, and a part of that proof may be found at p. 21——27 of this work.

And as I asserted Mr. Nash knew some facts of the vaccine disease, which certainly were either unknown to any one else, or not published, as appears also from the extract I have made. But I repeatedly said at the Committee that I did not see how the date of any experiments of vaccine inoculation ought to affect the Petitioner's claim; because, 1. The public owed nothing for those experiments, they not having been rendered useful. 2. There was no proof that the Petitioner derived his information from them; or if he had, that was even of no consequence to the public. This inquiry seemed to me a matter of curiosity and use for the history; very proper to be instituted for those purposes only.

With regard to Mr. Nash's M.S.S. the author of the Journal owns he had not examined them, yet he does not hesitate to pronounce, I spoke "without having plausible proof."

The same writer tells the public that I "depreciated" Dr. Jenner's discovery and merit as much as possible, and extolled myself. For this we have *the assertion* of the author only; and against that assertion I am willing to depend on the evidence before delivered, as taken from the Journal, and especially on the work now published. But if I thought Dr. J. had taken ground for his claims, to which he had not any right, it was not only fair, but it was my duty to depreciate as far as related to such pretensions.

We are told too of the great forbearance of the Journalist, "in wishing to avoid *the censure I passed on the Committee.*" For this I owe no gratitude; because if I thought the Committee merited censure, I not only, as I have already said of the Petitioner, should have considered I had an indisputable right to censure them, or any other body of men; but I should not have discharged my bounden duty unless I had delivered it. But the truth is, I do not know that the Honourable body were at all censurable. Some of the Members I regarded as taking a very active part in favour of the Petitioner; but that is not I believe censurable; because it is understood that the Committee is chiefly a body of such partial friends. The Committee, did not give in a report on such just, and even dignified grounds as I think might have been taken; for which excluded individuals may complain; but no censure is on that account merited; nor does the assertion of incompetency to judge of medical evidence imply censure.

I know not whether I shall stand excused for troubling myself to notice any other parts of the strictures on my conduct; especially on matters, which, if true, are perhaps not worth answering; yet such notice may be useful in serving to capacitate others to take measure of the writer, as to the points of *judgment, accuracy,* and *candour.*

1. What is said at p. 144, of the Journal, of my "great astonishment" at finding the whole oration (as my evidence is often sneeringly so called) not taken down, is not true; I knew what was then delivered was not related in the way of evidence, to be taken down; what I supposed might have been taken down, (but there was no astonishment) related to *my first evidence,* when Sir G. Baker was present, at which a conversation took place, and some questions were then asked, not quite in a formal way of inquiry; however, I was doubtful how far notice had been taken of what then passed, and I thought it right to ascertain that matter, by asking "to correct my former evidence." When the minutes were read, I found they did not attach to the subject of the conversation alluded to, which was on the origin and progress of vaccine inoculation; this being ascertained to be the case, it was doubtful whether my evidence could be resumed; but after some explanation, which has been called "an oration," a connection was perceived, and it being then late in the afternoon, I proceeded the day following to deliver the evidence given at p. 179—180.

At p. 148, (Journal) it is stated, that while I was attacking "the originality of Dr. Jenner's discovery, Dr. Heberden entering the room, &c." This I notice only to enable others to judge of the dependence to be placed upon this writer's statements, otherwise it is of not the least importance. So far from this account being *true,* I did not see Dr. Heberden at the Committee, he had left it before I arrived, if I was there on the same day at all. But this I remember, that I met him in the course of that day elsewhere, and I then learned on what point he had been questioned, which was on the case of Mr. Nash, above spoken of.

Of the *judgment* of the writer of the Journal, who has bestowed such pains to misrepresent me, let the public form their estimate, from the six or seven experiments of Cowpock inoculation, being considered to be adequate to the establishment of the vaccine new practice, as the same number of experiments by Harvey, were for the discovery of the circulation of the blood.

One thing more I must notice, however even ridiculous it has appeared to several of my friends, who laughed at it as the effect of jealousy, when I mentioned it to them at the time it occurred. Dr. J. we are told, very seriously begged to know with what design I paid a visit to the confidential Clerk of the Committee?

The Chairman would not put the question, and it had been determined to close the evidenee; now if he had asked, my answer would have been, that the question, as coming from Dr. J. I would not answer; but, that if the Committee even thought it optional with me to answer or not, I would have said, " there is a gentleman in the room, a Member of the Committee, who knows very well my business with the Clerk, for I have been inquiring of him concerning the mode of procuring a copy, not only of the Petition, but for a list of the Members of the Committee, and he very politely offered to procure them for me." It is, I find, understood that copies may be procured of the Clerk, with no more secrecy than any articele may be purchased at a shop. Nor can any one understand, whom I have consulted, what is meant by *confidential* Clerk; or conceive what information he could give, but what may be procured at the open Committee.

Explanation of the Plate referred to, p. 113.

OF the three series of figures in the plate, one designated S. P. represents the Smallpox in four different stages of the pock of the inoculated part, viz. the nascent *vesicle*—the vesicle complete, becoming a *pustule*—the pustule subsiding—and the pustule becoming a crust or scab. They were drawn from a fine specimen at the Small Pox Hospital, furnished by the kind attention of Mr. Wachsel, the very able assistant of Dr. Woodville; and who in truth got the first intelligence of the breaking out of the Cowpock among the London Cows, in January, 1799, which has already done the country so much service.

The two series comprehended under the bracket, with the title C. P. are two examples of the Cowpock also in four stages, viz. of nascent vesicle— completely formed vesicle—vesicle beginning the scabbing process—and the vesicle become in one instance partly a scab, and in another wholly so, with peculiar characters.

Inadequate as drawings without descriptions are to the communicating just notions of eruptions, the plate before us, to my apprehension, exhibits such palpable differences of form, and other properties, that, as hath been observed in the foregoing pages, p. 107, 113, 114, it seems incredible that any one should not only in the first instances of seeing the Cowpock, have spoken of it as resembling exactly the Small-pox, p. 101; but have continued to repeat that comparison after the differences had been noticed by several observers.

---

* The Figures are only printed, and if coloured, would no doubt appear more advantageously; but in their present state they will, it is hoped, answer the end in view, and not be discreditable to the modest Artist, Mr. Lee.

INDEX.

Page

ADDINGTON, Mr. proves London Vaccine matter to be the same as Dr. Jenner's - - - 114
Aiken, Mr. useful popular book - - - 109
America Vaccine Inoculation, introduced by the Institution - - - - - - - - 173
Apes take the Smallpox by inoculation, and no doubt the Cowpock - - - - - - - 29
Author's instructions for taking matter - - - 117
——— oral evidence - - - - - 182
——— for preserving matter - - - 129, 177

Bankes, Mr. his acuteness and judgment - 151, 158
Bradley, Dr. his calumnious criticism - - - 179
Barry, Dr. his account of Cowpock in Ireland - 33
Berlin Inoculation at, of the Princess L. - - 73

Carpue, Mr. his experience cited - - - - 174
——— his great services - - - - ibid.
Caustics and Escharotics recommended for secondary disease, by Dr. Jenner - 139
——— effect on public opinion, 56, 140, 159
Claims on the Committee of Woodville and the Author 167
Colman, Professor, letter on inoculation of grease 135
Cowpock in Italy, Switzerland, Germany, and Ireland 29, 137, 102
——— Epibootic, in London, January 1799 42
——— inoculation, with London matter, by Woodville and the Author - - - - 42
——— Letter circular of Reports March 1799 45
——— local affection in nurses after the Smallpox 64
——— matter preserved in hydrogen and nitrogen gas 71
——— matter preserved in bottle with æther or alcohol - - - - - - - - 174

INDEX.

Page

Cowpock disease efficacy in preventing Smallpox, not exclusively Dr. J's. right - - - - 86
——— characteristic properties distinguished 104, 108
——— permanent nature of the poison - 106, 114
——— no verbal description, by Dr. J. - - 112
——— characters of, best guide for taking matter 117
——— not disposed to produce ulcer - - 129
——— regular not like any other pock - - *ibid*
——— can occur but once in same person - 135
——— not after the Smallpox - - - - 138
——— not consistent with experience that constitutional affection is from matter changing its specific properties - - - - 115
———, Carrie, Dr. on age of matter - - 123
Chickenpox, like vaccine, produce often no constitutional disorder, according to Heberden - - - 174

Dogs, a disease of, vicarious of madness in South America 3

Eruptions, Smallpox attending Cowpock, none in private practice - - - - - - 54
———, new law of their attending Vaccina - 141
Evidence of the Author for vaccine inoculation 36, 179
———, oral, of the Author - - - - 189
——— in printed Report of the Author - - 36
Evidences at the Committee, their attestation 35, 37, 87—89, 147

Grenville's, Lord, note - - - - - - 80
Grease, opinion of its being origin of Cowpox effect on the public mind - - - - - 134
———Experiments of Inoculation by Colman - 135

Historical summary of facts - - - - - 159
Huggan, Dr. his industry in inoculation - - 117
Hypotheses erroneous, of Woodville and Jenner, concerning Cowpox with Smallpox - - - - *ibid.*

Infants shown to be inoculated with safety, ascertained by Dr. Woodville and the Author - - - - 86

Page
Inflammation of arms much less than expected from Dr. Jenner - - - 85, 130
——————— said to produce constitutional disorder, for which caustics proposed 139
Inoculation, danger from the constitutions of patients rather than from the matter employed 122,124,125
————, impediments to - - - - 128
———— — alternate of Smallpox and Cowpox, and cotemporary - - - - - 143
————, Cowpock, in Holstein immemorially 29
———————, by whom established - 161
———————, claim for, valid proposed 163
Inoculations, the earliest ones ridiculed - - 168
———— practised by some practitioners from interest only - - - - - - 169
———— previous to Dr. Jenner - - 17—35
———— casually - - - - - 12—17
Institution, Vaccine, established at close of 1799, account of - - - 75, 183
——————— Letter to Paris Committee - 80
——————— their directions for choice of matter 123
——————— describe characters of Cowpock 125

Jenner, Dr. compares Cowpock to Smallpox, and does not distinguish them by description or plates 102,113,114
——— finds London vaccine matter produces Cowpock 45, 174
——— 2d publication account of - - - - 43
——— eight cases of vaccine inoculation, up to 1798 39
——— four cases from human subject to human subject 40, 42,
——— 3d publication account of - - - 85, 118
——— does not distinguish age of matter, nor of the pock, nor describe their characters 101, 102, 113
———, his opinion that Cowpox and Smallpox are modifications of the same disease - - 119
——— Summary of improvements - 128—131, 159

Page

Jenner, Dr. examination of his facts and claims - 132
——— Petition, copy of - - - - - 178
——— directions not to use matter later than 9th day, or after areola formed - - - - 120
——— remuneration ought not to be affected by any antecedent instances of inoculation - - 164
——— the immediate occasion of the whole practice 1, 2, 163
——— claim proposed honourable and just - - 166

Keate, Mr. his zeal in promoting the vaccine inoculation 50
——— introduced the practice into the army - - 51
——— inoculated several parishes with the Author - 53
Kelson could not produce Cowpock by Grease - 177

Lambinus's letter to Muretus cited - - - 167
Letter from the Medical Committee at Paris - - 77
——— of Vaccine Institution, on sending matter to Paris 80

Malim, Mr. his case of Smallpox after Cowpock - 144
Matter of Cowpock distributed in March 1799, in 200 letters, by the Author - - 45
——————— found to be the same as that of Gloucestershire, by Jenner - 45, 46
——————— sent to Paris in Hydrogen gas 81
——————— evidence for transferring indefinitely without diminishing efficacy 86—89
——— according to age considered - 90, 116, 121
——— purulent its effects - - - - 96—99
——— whether difficult to select - - - - 101
——— proposal for determination to Dr. B. - - 89
——— kept efficacious three months - - - 115
——— when vesicle becomes a pustule, cannot be depended upon - - - - - 116
——— rules for taking vaccine matter same as variolous 116, 117, 120
——— of Cowpock and Smallpox produce their specific effects at the same time on same person - 119
——— of Cowpock cannot change into Smallpox, nor Smallpox into Cowpock matter - - 120

INDEX.

Page
Matter not to be taken after areola - - - 123
——— this opinion ill-founded - - - - 126
——— on preservation - - - - 126, 177
——— mischief of rather from the constitution than any thing else - - - - 122, 124, 125
——— permanancy determined - - - - 106
——— proper for inoculation, determined by characters of the pock, not by the age - - - 116
——— cases inoculated with 12th day matter and 5th day 175, 176
——— Author's directions for taking, to Stromeyer 117, 177

Nash, late Mr. very experienced Vaccine Inoculator above 20 years ago - - - - - 24
—— asserted by the Author to have known facts unknown to others - - - - 25, 184
—— distinguishes cicatrix after vaccine inoculation larger than after Smallpox - - - - - 25
—— cases of vaccine inoculation - - - *ibid.*
—— long proposed vaccine practice - - - 28
—— that Cows have the Cowpock but once - - 27
—— no constitutional affection in Cowpock - - 25
—— no suppuration - - - - - - *ibid.*
—— not certain Vaccine occur after Smallpox - 27
—— asserted that Cowpock only communicable by inoculation - - - - - - 25
—— knew a great number who never had the Smallpox after the Cowpock - - - - 24
—— says remarkable that no one has written on the Cowpock - - - - - 24, 26
—— own son probably inoculated for Cowpock - 28
—— was prepared to publish on the Cowpock inoculation as superior to the variolous - - - - 26
—— hopes not to be opposed in his plan of introducing Cowpock inoculation - - - - *ibid.*
—— some people can neither take Cowpock nor Smallpox *ibid.*

INDEX.

Page

Vaccine inoculation, failures from want of description 102, 107

——— errors from comparison to Smallpox 103, 113

——— if had failed, Dr. J. would not have suffered - - - - 68

——— how scouted when first proposed 168

Vaccania, summary of facts concerning - - 159

——— whether success depended on the Petitioner 161

——— name of the first Cambrian lady inoculated 173

Variolæ vaccinæ incongruous terms - - - 1

Wales, Cowpock introduced by the Author - - 173

Woodville, Dr. his extensive experience in 1799 47

——— visit to Paris in June 1800 - - - 84

——— letter to the author on the effects of matter according to age of the pock - - - 92

——— his acuteness in first distinguishing the characters of the Cowpock - - - 104, 107

——— first began vaccine inoculation in London 43

——— finds no constitutional disease in many cases of Cowpock - - - - - - 174

——— topical applications not wanted - 55, 130

——— experience of 4000 cases up to January 1801 178

——— Smallpox and Cowpock, varieties of same species - - - - - - 118

Water cold best application in inflamed arms - 175

THE END.

H. Bryer, Printer, Bridewell-Hospital, Bridge-Street.